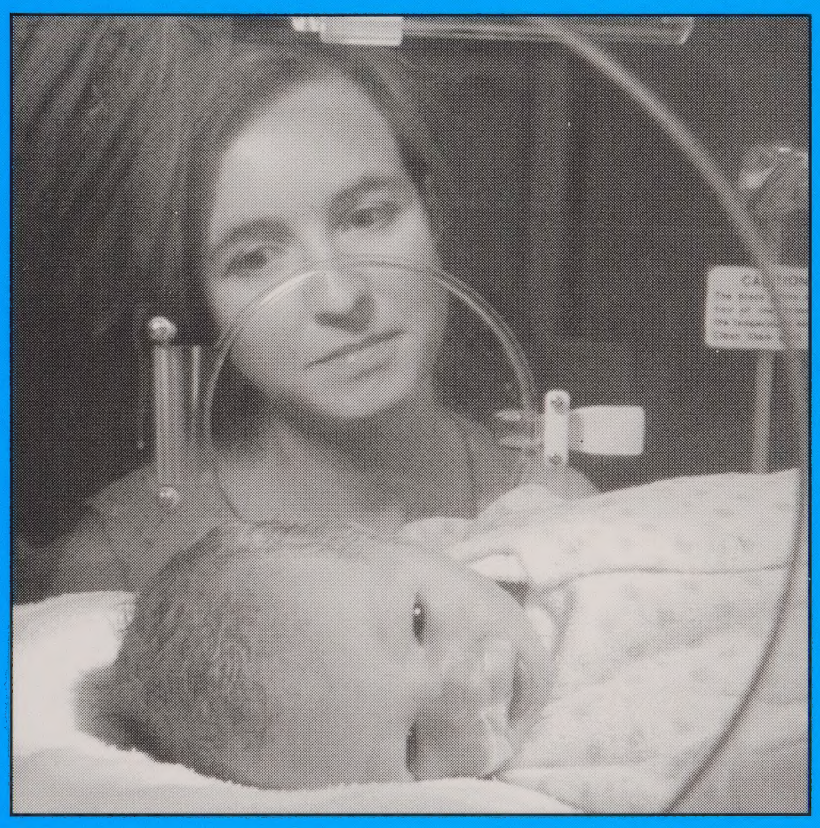
HBN 21
Maternity department

MC105

Maternity department

Health Building Note/ Scottish Hospital Planning Note 21



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Maternity department

Health Building Note/
Scottish Hospital Planning Note 21

London: HMSO

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First published 1996

ISBN 0-11-322246-7

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About this series

The Health Building Note/Scottish Hospital Planning Note (HBN/SHPN) series is intended to give advice on the briefing and design implications of Departmental policy.

These Notes are prepared in consultation with representatives of the National Health Service and appropriate professional bodies.

Health Building Notes/Scottish Hospital Planning Notes are aimed at multi-disciplinary teams engaged in:

- designing new buildings;
- adapting or extending existing buildings.

Throughout the series, particular attention is paid to the relationship between the design of a given department and its subsequent management. Since this equation will have important implications for capital and running costs, alternative solutions are sometimes proposed. The intention is to give the reader informed guidance on which to base design considerations.

Acknowledgements

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Royal College of Obstetricians & Gynaecologists
Royal College of Midwives
British Association of Perinatal Medicine
Association of Anaesthetists of Great Britain and Ireland
Association for Improvements in Maternity Services
National Childbirth Trust
Royal College of General Practitioners
Scottish General Medical Services Committee
Scottish Society of Anaesthetists
Joint Paediatric Committee of the Scottish Royal Colleges
British Paediatric Association
Scottish Association of Health Councils
Neonatal Consultants Group – Scotland
Obstetric Anaesthetists Association

Executive summary

Health Building Note/Scottish Hospital Planning Note 21 gives briefing and planning advice on maternity departments which have facilities based on the concept of birthing rooms for women in all stages of labour including recovery after birth until discharge.

The facilities described in this Note aim to enable all mothers to have a good standard of antenatal and postnatal care and a safe birth in a congenial, fully equipped maternity department with good neonatal services readily available for the new-born baby. The design of a maternity department should be able to meet the needs of other family members who may accompany a woman.

This Note provides information on the design of a maternity department consisting of:

A. Entrance

B. an antenatal/postnatal clinic suite including ultrasound facilities;

C. day assessment facilities including early pregnancy care;

D. in-patient accommodation including birthing facilities, an obstetric operating theatre suite, and provision for high dependency care;

E. a neonatal unit.

The schedule of accommodation is based on a workload of 2,500 births per annum.

Antenatal/postnatal clinic suite

This suite provides a consultative service for screening, investigation, assessment, diagnosis and treatment of women attending as out-patients. Preparation for parenthood and health education sessions may take place here. The suite should have an identity of its own and be able to function independently of the general hospital out-patients department. It should be located on the ground floor and within easy reach of the birthing area and maternity in-patient beds. One of the most influential factors in determining the size of this suite will be the number of clinic sessions provided off-site in local facilities. The antenatal/postnatal clinic suite requires easy access to dedicated ultrasound facilities.

Specific clinical areas include:

- a suite of consulting/examination rooms;
- ultrasound scanning rooms.

Day assessment unit

The day assessment unit provides facilities for the assessment of women with potential complications of later pregnancy. The unit provides a full range of foetal monitoring services including cardiotocography and ultrasound. The unit should be close to the antenatal/postnatal clinic suite with which it shares facilities and be within easy reach of the dedicated ultrasound suite.

Specific clinical areas include:

- a monitoring and sitting area – with day beds/reclining chairs for performing cardiotocography and ultrasound scanning;
- a consulting/examination room.

Early pregnancy unit

The early pregnancy unit provides initial investigation and clinical assessment of those women with early pregnancy problems such as miscarriage and ectopic pregnancy. The unit should have good links to laboratories, the blood transfusion service, in-patient beds and an operating theatre suite. This unit will operate as a day unit. Women requiring to be admitted overnight will be transferred to an in-patient area.

Specific clinical areas include:

- an assessment room – for blood sampling and ultrasound scanning;
- a four bed multi-bed bay.

In-patient bed areas

In order to increase the flexible use of beds, this guidance does not designate separate beds for antenatal, labouring or postnatal women. Birthing rooms described in this Note are based on the concept of rooms which most mothers will occupy during the entire period of their stay. They are referred to as LDRP (labour, delivery, recovery and post

partum) rooms. These rooms are domestic in style and have ensuite sitting areas and toilet and shower facilities.

LDRP rooms are sized and serviced sufficiently to accommodate women who require high-dependency care. Rooms used for high dependency care must be designated as such and be located close to the operating theatre suite.

In addition to birthing rooms, in-patient beds are required for women who require admission to hospital over and above the standard period of confinement, and for those women who prefer not to remain in an LDRP room after delivery. These beds may be provided in a combination of single- and multi-bed rooms.

An obstetrics operating theatre suite is an integral part of birthing facilities. A standby theatre within this suite is required.

Specific clinical areas include:

in-patient bed areas:

- a consulting/examination room;
- LDRP rooms;
- single bed rooms;
- multi-bed rooms.

operating theatre suite:

- anaesthetic room;
- two operating theatres;
- recovery room.

Neonatal unit

A neonatal unit provides care for those new-born babies who cannot be cared for beside the mother. This unit should be located as close as possible to the birthing area to enable ill babies to be transferred quickly and easily. Babies will be nursed in cots or incubators in a range of areas according to their need for life support systems, intensive care, observation or isolation. A combination of single- and multi-cot nurseries may be provided. At least two single-cot nurseries are required for the containment of airborne infection.

Specific clinical areas include:

- single and multi cot nurseries – to accommodate intensive care cots and special care cots;
- treatment room;
- hearing assessment and vision testing room.

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1.0 Scope of Health Building Note/Scottish Hospital Planning Note 21

Scope

1.1 This Health Building Note/Scottish Hospital Planning Note (HBN/SHPN) gives briefing and planning advice on maternity departments which have birthing facilities based on the concept of birthing rooms for women in all stages of labour including recovery after birth until discharge.

1.2 This HBN/SHPN takes into account the Department of Health's policy document 'Changing Childbirth' and Health Policy and Public Health Directorate's (SOHHD) report 'Provision of Maternity Services in Scotland: A Policy Review', HMSO, 1993.

1.3 The guidance is intended for use for maternity departments which are attached to, or form part of, an acute general hospital; also, as the basis for discussing accommodation in teaching hospitals. It may be considered desirable to provide medical care for high-risk women in labour and the immediate puerperium in the teaching hospital/tertiary referral centre in other ways. The guidance can also be used for peripheral antenatal clinics and day assessment facilities. The health service facilities are aimed to enable all mothers to have a good standard of antenatal and postnatal care and a safe birth in a congenial, fully equipped maternity department with good neonatal services readily available for the new-born baby.

1.4 It is envisaged that consultant obstetricians, anaesthetists, paediatricians, general practitioners, midwives and neonatal nurses will be fully involved in the briefing and planning process. Representatives of the end-users may also wish to be involved. With changes in patterns of care, and with hospital design moving away from traditional facilities, organisational development through all professional groups working in collaboration is emphasised.

1.5 Statutory requirements including fire safety and precautions will be covered in Chapter 4.

Inclusions

1.6 This Note provides information on the design of the department which consists of:

a. an entrance;

b. a maternity antenatal/postnatal clinic suite including ultrasound facilities;

c. day assessment facilities including early pregnancy care;

d. in-patient accommodation including birthing facilities, the obstetric operating theatre suite, and provision for high-dependency care;

e. a neonatal unit.

Application

1.7 For simplicity the guidance is presented as if the required accommodation will be provided by new building. However, the principles outlined are equally valid for upgrading and adapting existing buildings – see Chapter 4.

Capital Investment Manual

1.8 The Capital Investment Manual contains the NHS Executive/Scottish Office Department of Health's procedural framework governing the inception, planning, processing and control of individual health building schemes. There are various mandatory requirements within this overall process but the way these tasks are carried out is mainly for NHS bodies to determine. Approval from the NHS Executive/Scottish Office Department of Health for business cases will depend on how they intend to carry out the mandatory tasks. The Manual gives guidance on the technical considerations of the full capital appraisal process and also provides a framework for establishing management arrangements to ensure that the benefits of every investment are identified, realised and evaluated. It emphasises three key points:

- each individual scheme must be supported by a sound business case. A business case must convincingly demonstrate that the investment is economically sound (through an option appraisal) and financially viable (affordable to the NHS body and its purchasers);
- an exploration of private finance alternatives should be viewed as a standard option whenever a capital scheme is considered. Once the Outline Business Case has been approved, the preferred option should be compared to potential private finance alternatives. Approval to the Full Business Case will not be given unless there is a clear demonstration that private finance alternatives have been adequately tested;

- the delivery of a major capital project is a difficult and complex task. Nevertheless failure to deliver on time and cost diverts resources from direct patient care. The establishment of an appropriate project organisation is essential to ensure that projects are delivered within agreed budgets and timescales.

Health Building Notes/Scottish Hospital Planning Notes 1 and 2

1.9 HBN1 – 'Buildings for the health service' and SHPN 1: 'Health service building in Scotland' describe the planning, construction and commissioning of a health building and introduce the readers to Departmental publications on all aspects of building.

1.10 HBN 2 – 'The whole hospital – briefing and operational policies' and SHPN 2 – 'Hospital briefing and operational policies' describe the preparation of a brief for a health building and explain how the stages of the process may be related to mandatory requirements. They also give guidance on the formulation of operational policies governing the content, working and design of hospitals.

Cost Allowances

1.11 The Departmental Cost Allowances associated with this HBN are promulgated in 'Quarterly Briefing' (issued separately under cover of an Estates Policy Letter) on behalf of the NHS Executive.

Equipment

1.12 Equipment is categorised into four groups, as follows:

Group 1: items (including engineering terminal outlets) supplied and fixed within the terms of the building contract;

Group 2: items which have space and/or building construction and/or engineering service requirements and are fixed within the terms of the building contract but supplied under arrangements separate from the building contract;

Group 3: as Group 2 but supplied and fixed (or placed in position) under arrangements separate from the building contract;

Group 4: items supplied under arrangements separate from the building contract possibly with storage implications but otherwise having no effect on space or engineering service requirements.

Group 1 items are provided for in the Departmental Cost Allowance Guide associated with this Note. The Department of Health Equipment Cost Allowance Guide (ECAG) specifies a sum of money for the functional unit for Groups 2 and 3, the ECAG does not cover Group 4 items. In Scotland, guidance on formulating a cost allowance for groups 2, 3 and 4 is contained in SHHD/DGM(1989)96 issued to General Managers of health boards on 24 November 1989.

Works Guidance Index

1.13 This volume indexes under subject references much of the relevant guidance that is current at the time of publication. Specific issues, such as arrangements for dealing with fire, security, energy conservation, etc., are also covered by other published guidance which must be taken into account. It is recommended that project teams check the current edition of the Works Guidance Index and investigate the possibility of changes occurring since its publication.

2.0 General considerations

Purpose and objectives of the service

2.1 The main objective is to provide a safe service for both mother and baby, and to provide for their care in a pleasant environment supported by all appropriate facilities.

2.2 Integrated hospital and community services should provide a family-focused woman-centred approach to maternity care. Services should be closely linked with primary health care and other community health services. Close multi-disciplinary co-operation between medical staff, midwives, health visitors and social workers is important in ensuring as good an outcome as possible for the woman and her unborn child.

2.3 Community-located services enable local access and greater opportunity for continuity. Consultant outreach clinics allow women and their families to have all necessary specialist consultation without the need to travel.

2.4 Local health care centres may have facilities for assessment and monitoring hitherto only found in acute general hospital maternity departments, for example ultrasound and cardiotocography. Telemetry enables maternal and foetal monitoring from a woman's home to a central point.

2.5 The more dispersed the locations for antenatal assessment, monitoring and care, the more critical it is for the data generated to be collected, collated and available for use whenever and by whomsoever a woman is seen.

Background

2.6 Traditional obstetric care has been founded on hospital-based antenatal care together with hospital birth and postnatal care. This model of care has contributed to the marked reduction in both maternal and perinatal mortality rates that have occurred since the 1950s. Traditional maternity facilities have included:

a. large antenatal clinic areas;

b. labour ward areas, sometimes cramped for modern equipment;

c. separate large antenatal and postnatal wards with areas set aside for nurseries;

d. isolation areas for the treatment and care of mothers with infections and their babies.

2.7 Older buildings and even some more recent ones are of an intimidating scale which creates an impersonal, institutional atmosphere.

2.8 The late 1980s and 1990s have seen a change in philosophy towards a model of maternity care: a change largely initiated by user demand. There is a call for more woman-centred, user-friendly maternity care where choice, continuity and community-based care are the basis of a modern maternity service. Healthy pregnant women do not require to receive much antenatal care in the hospital setting, nor to spend a long time in hospital postnatally; moreover, women do not require nor wish to be considered as "patients".

2.9 Multi-disciplinary hospital and community staff team care with obstetricians and midwives sharing care underlies contemporary practice.

2.10 It is increasingly likely that more team care will be practised which is planned and delivered from community bases.

2.11 With healthy pregnant women, midwives are able to plan, implement and evaluate the care. This may be on a one-to-one basis or through midwives working in teams providing care from booking through the ante, intra and post partum periods.

2.12 In order to facilitate continuity of care, midwifery-led care will be undertaken by the midwife within both the hospital and community setting.

2.13 Women may choose to have only the delivery in hospital. In these cases mother and baby may return home 6-8 hours after birth and continue with midwifery care in the community. One type of scheme embodying this principle is the DOMINO (Domiciliary in and out) scheme, in which the community midwife looking after the mother brings her to the maternity unit, continuing with the care and delivery in hospital.

2.14 In some maternity units there may be designated birthing rooms allocated to midwifery led care.

2.15 For women who have or who develop complications which may adversely affect the outcome of pregnancy, sophisticated professional expertise and advanced technologies can help to achieve a successful outcome. Maternity departments should provide the facilities to accommodate both various models of care and the needs of women and their babies.

2.16 Antenatal facilities should be attractive, user-friendly, adequately sized and should include:

a. clinic areas where consultations can take place in privacy;

b. integrated areas for examination and monitoring by ultrasound or other means;

c. associated areas for assessment and monitoring on a sessional basis;

d. individual rooms suitable for discussion.

The facilities should be able to meet the needs of other family members who may accompany a woman.

2.17 The requirement for bed provision for women both antenatally and postnatally has reduced as alternative antenatal and postnatal management has developed. Bed areas need to be serviced to enable the management and care of women with complications of pregnancy or delivery as well as those without. However, the objective is for all facilities to offer a comfortable hotel-style ambience and enable individual self-management in privacy whenever possible.

2.18 Birthing facilities which can accommodate both the straightforward and the more complicated delivery in a user-friendly atmosphere is more readily achieved with the advanced sophisticated technology of monitoring equipment. Consideration should be given to the manner in which high-dependency care is given.

2.19 Advances in the care of sick babies bring the need for sophisticated neonatal units providing facilities and equipment to meet the needs of the babies in a comfortable environment for parents and staff.

2.20 In summary, maternity departments now being planned or modified should be capable of meeting the diverse needs of women and their babies. A woman who may require very different levels of input at different stages of pregnancy, labour and postnatally should be able to have her needs met without undue movement from one location to another. Staff should have all the relevant information collected over time readily available, preferably on an unique health record – and the environment should be congenial and enabling yet capable of a complete service response.

Maternity department's location in the hospital

2.21 Locating the maternity department within the body of the hospital has advantages for women who may require access to more specialised diagnostic and treatment facilities. The department should be located within easy access of the main diagnostic services, especially the radiological services, pathology and anaesthetic services. It should also be easy for the staff of social work services to come to the maternity department.

2.22 Maternity in-patient beds have in the past often had low occupancy, largely due to seasonal variations in births. In order to increase the flexible use of beds this guidance does not designate separate beds for antenatal, labouring or postnatal women.

Maternity antenatal and postnatal clinic facilities

Purpose

2.23 The clinic suite provides a consultative service for screening, investigation, assessment, diagnosis and treatment. Attendance at a maternity antenatal/postnatal clinic suite is often a woman's first introduction to a health service facility and a pleasant, well designed building, with a non-institutional atmosphere will significantly allay fears and contribute to confidence.

2.24 Following discharge from hospital some babies may require to be followed up on an out-patient basis. In hospitals with paediatric departments babies should be seen in the paediatric out-patient facilities. The schedule of accommodation in this HBN is based on the assumption that there will be a paediatric out-patient clinic on site. Details regarding the planning of this facility are included in Health Building Note 23 – 'Hospital accommodation for children and young people'. Where there is no paediatric department in the hospital in which the maternity department is being planned, facilities for reviewing babies may be provided within a maternity department out-patient suite. Size will depend on the likely level of use and may not be solely designated for this purpose but have appropriate treatment and equipment facilities. Planning should be particularly sensitive to the special needs of women attending as out-patients who may have lost their babies.

Location

2.25 The suite should be designed so that it has an identity of its own and can function independently from the general hospital out-patients department. The suite should be on the ground floor, well signposted and within easy reach of the birthing area and maternity in-patient beds.

2.26 Wherever possible, the environment should contribute to a quiet, relaxed atmosphere that will maintain the woman's confidence and dignity. The father, friends or other children may accompany her and waiting

areas should be planned with this in mind. Play areas, especially, should be considered.

Assessment of need

2.27 The size of the clinic suite is related to the number of expected attendances per session, the number of proposed sessions, the number of doctors and midwives, and the number of preparation for parenthood teaching sessions. Clinic sessions may also be dedicated to women with specific care needs, for example diabetes, other medical conditions or pregnancy complications, and this should be considered in determining the clinic size. An influential factor in determining the number of sessions will be the level of services provided off-site in local facilities.

Ultrasound services

Purpose

2.28 Ultrasound examinations have become an essential element of antenatal screening and monitoring. Some women will require ultrasound examinations to assist in the diagnosis and management of complications of pregnancy, whereas others may require procedures under ultrasound guidance – for example amniocentesis. Ultrasound examinations have also become increasingly important in the management of neonates and when planning ultrasound facilities the need for this should be considered. Portable ultrasound equipment may be used as an alternative in small units by appropriately skilled staff.

Location

2.29 A dedicated ultrasound suite should be in close geographical relationship to the antenatal clinic. It may be within the main X-ray department as long as that also is in close proximity to the antenatal clinic. There should be easy access from in-patient beds and day assessment areas.

Assessment of need

2.30 The size of the facility will depend on the number of deliveries within the unit. As many ultrasound examinations require a full bladder a drinking water supply should be provided and adequate toilet facilities should be available for use immediately after the examination. Adequate space within at least one scanning room should be provided for the performance of minor procedures such as amniocentesis as well as for the movement of trolleys or beds for in-patients. Ultrasound rooms should have an associated changing area and sub-waiting space. Women should have aural and visual privacy within the ultrasound examination room/s. The ability to darken the examination room by window blackout and dimming of artificial lighting is required.

X-ray facilities

2.31 X-rays may be required for the diagnosis of complications in the postnatal period or for the management of new-born babies. Although suitable portable X-ray equipment should be available within a maternity department and within easy access of the neonatal unit, it is assumed that most women requiring X-rays will have these performed in the main X-ray department. Similarly, it is assumed that portable films will be developed within the main X-ray department.

Day assessment facilities

Purpose

2.32 Day assessment units provide for the assessment of women with potential complications of later pregnancy.

2.33 There is some evidence that the use of day assessment units reduces the number of antenatal beds required. The function of day assessment is to provide assessment of the mother and the development of the foetus. Access to laboratory facilities for biochemistry and haematology and for rapid return of laboratory results is required. The unit will provide a full range of foetal monitoring services and this will include ready availability of cardiotocography and ultrasound. It is important that the facility should have a comfortable waiting and reception area with appropriate areas for maternal and foetal assessment. Reclining chairs and beds with ultrasound facilities present, within or adjacent to the unit, should be provided. Interview rooms may need to be provided for counselling and medical consultation if suitable accommodation is not readily accessible in the antenatal/postnatal clinic suite.

Location

2.34 Ideally the day unit should be situated in close proximity to the antenatal/postnatal clinic suite, with which it may share utilities, and be within easy access of the dedicated ultrasound suite.

Assessment of need

2.35 The size of the facility will depend on the total numbers of deliveries associated with the maternity unit and the health status of the population served. The number of attendances in a day assessment unit may be

readily calculable in maternity units which currently have a well established day assessment facility. The increased development of early pregnancy care should also be taken into account when forecasting requirements. The facility should be able to accommodate the number of projected attendances per session without overcrowding and allowing ease of movement within the facility. In addition, it should allow a satisfactory degree of privacy. Parent facilities, crèche and sanitary facilities required will be similar to those documented for the out-patient unit in paras 3.3 – 3.7 and may be shared.

Early pregnancy unit

Purpose

2.36 The aim of an early pregnancy unit is to provide initial investigation of those women with early pregnancy problems, particularly threatened miscarriage, missed abortion, incomplete or inevitable miscarriage and ectopic pregnancy. Facilities are required for diagnosis of pregnancy by pregnancy test and ultrasound to check the pregnancy viability, gestational age and that the pregnancy is intrauterine. The availability of staff trained in counselling skills will also be required.

2.37 Referrals will be made by GPs, midwives or women themselves. Appointments will be programmed from early morning onwards although women attend throughout the day.

2.38 Assessment of pregnancy will focus on ultrasound and clinical examination. Women with a threatened miscarriage may be managed in the community, while those with a missed abortion or inevitable or incomplete miscarriage or ectopic pregnancy, may require in-patient or day case management. Such women should be admitted to a dedicated early pregnancy unit for clinical assessment.

Location

2.39 Early pregnancy units are now well established in obstetric and gynaecology units.

2.40 The unit should have good links to laboratories, including blood transfusion service (the latter for the provision of blood products and anti-D), in-patient beds and, in particular, an operating suite.

2.41 As these units will operate as day units, they will not be able to provide overnight care for women. On occasion women will require overnight admission so necessitating the ready transfer to in-patient obstetric or gynaecological beds according to women's preference and the local policy.

Assessment of need

2.42 The required size for such a service will depend on local circumstances but 2-4 beds would be considered appropriate for a hospital dealing with around 2,500 deliveries. This could be scaled according to local needs. Bed services should be similar to those in acute general wards with access to medical gases and power at every bed.

In-patient bed areas including birthing facilities and operating theatre suite

Purpose

2.43 The function of maternity in-patient accommodation is to provide a suitable and safe environment for mothers and babies and facilities for their diagnosis, assessment, monitoring, care and treatment for all levels of care excluding intensive care. The psychological and other needs of mothers and babies should be considered, so that suitable conditions for maintaining family relationships, including visits by fathers, relatives and others, are not overlooked. Facilities for teaching parents and medical, midwifery and nursing staff are also needed.

2.44 The birthing suite should provide sufficient comprehensive birthing facilities in the hospital's catchment area for all mothers who wish to be delivered in hospital – whether the lead lies with the consultant obstetrician, the general practitioner obstetrician or the midwife.

2.45 Labour and birth may be straightforward or complicated and the mother ambulant or in bed; her labour may need to be monitored using specialised equipment. In many instances the father, a relative or a friend will be present. As obstetric emergencies can occur without warning, immediate access to facilities and staff is essential. Such facilities will include resuscitation equipment for babies.

2.46 As the majority of pregnant women only require hospital admission for the duration of labour, birth and the immediate postnatal period, typical birthing rooms described in this Note are based on the concept of rooms which most mothers will occupy during the entire period of their stay. THESE ROOMS ARE REFERRED TO AS LDRP (LABOUR, DELIVERY, RECOVERY AND POST PARTUM) ROOMS. They are designed to give a homely feeling and to have ensuite sitting areas and toilet and shower facilities – see Diagram 2.

2.47 A larger LDRP room will be required for disabled mothers or for multiple births.

2.48 An obstetrics operating theatre suite where major operating and life saving procedures will be carried out on mothers and babies should be an integral part of the birthing facilities. There should be an additional standby theatre within this suite which can be utilised for complicated cases such as twin or breech delivery, as well as emergency caesarean section.

2.49 In-patient bed accommodation in addition to birthing rooms is required for women who for medical, obstetric, social or geographical reasons require admission to hospital either antenatally or postnatally over and above the standard period of confinement. These beds must be associated with facilities capable of providing a full range of medical, midwifery and nursing services and serviced as beds on an acute general ward.

2.50 Some in-patient beds will be required for women prior to planned caesarean section and after both planned and emergency caesarean section. This accommodation is best provided in single rooms which should be fully serviced with medical gases etc and be suitable for the increased needs of the immediately post-operative woman and her baby.

2.51 Beds catering for women with special needs will be required in the light of local circumstances, for example, social issues, drug abuse, medical conditions. These will influence the requirement for single-bed room provision.

2.52 The size and design of bed rooms should allow for the adequate supervision of mothers and babies at all times. Multi-bed rooms will have curtains around each bed to offer some privacy when required. All bed rooms should be suitably furnished and attractively decorated with windows providing adequate natural daylight and ventilation.

Location

2.53 In-patient accommodation should be easily accessible from and within a short distance of the hospital entrance.

2.54 Birthing accommodation must have an obstetric operating suite.

2.55 The in-patient bed area should be close to the neonatal unit. Mothers and fathers should have unrestricted and easy access to the latter.

Assessment of need

2.56 Adequate birthing rooms are of prime importance: it is essential to provide sufficient facilities to meet clinical demand. It is not always possible to foresee which labours will become complicated, therefore all birthing rooms must be designed so that it is possible to deal swiftly and expeditiously with emergencies at any stage of labour or in the early postnatal period. In general, women should remain in the same room throughout all stages of their labour. After the birth they should remain in LDRP rooms. Some mothers may wish to be transferred to a bed in a multi-bed room.

2.57 The number of LDRP rooms should be estimated on the deliveries per annum and the anticipated number of caesarean sections and obstetric operations which require operating theatre conditions. The exemplar schedule of accommodation reflects a workload of 2,500 births per year and is based on the following equation:

On the basis of 2,500 births per annum, distributed as follows:

16% caesarean section:	400
84% vaginal deliveries:	2100

Assume a 60 hour average stay and 75% bed occupancy for vaginal deliveries;

Assume a 120 hour average stay and 75% bed occupancy for caesarean sections;

No. of LDRP rooms =

$$\frac{60 \times 2{,}100}{8760 \times 0.75}$$

$$\frac{126{,}000}{6570} = 19 \text{ rooms}$$

No. of single bed rooms for caesarean sections =

$$\frac{120 \times 400}{8760 \times 0.75}$$

$$\frac{48{,}000}{6570} = 7 \text{ rooms}$$

2.58 However, lengths of stay will be influenced by local geographical and social factors and it is for trusts to determine suitable lengths of stay in light of these factors. The exemplar schedule may be regarded as a basis to estimate the accommodation required for greater or smaller workloads.

2.59 The number of additional in-patient beds will depend on local policies which result from local socio-economic and geographical considerations.

2.60 In accordance with the calculation at paragraph 2.57 the exemplar schedule of accommodation in Chapter 6 of this Note shows a complement of 26 birthing rooms, 7 of which will be single-bed rooms allocated to women undergoing caesarean section procedures. One of the 19 LDRP rooms should be designed to accommodate a

disabled user – see paragraph 3.88. The exemplar schedule provides a further 12 beds which may be in single- or multi-bed rooms, or indeed some may be in a patient hotel. The environment should be as non-clinical and domestic as possible.

2.61 Obstetric requirements fluctuate from month to month and year to year. However, for the hospital to cope with the demands of its population, it must have sufficient capacity to deal with the peaks in demand.

Neonatal facilities

2.62 The following accommodation should be available in all maternity departments:

- an area designated and equipped for resuscitation of a new-born baby;
- space at the bedside so that a healthy new-born baby can be cared for alongside its mother;
- a warm room where an infant can be looked after for short periods for example during neonatal examination, or for a short period of observation after birth. Phototherapy may be carried out in such an area, although this can also be safely achieved alongside a mother in a warm bedside area.

2.63 New-born healthy babies, healthy pre-term babies, those born by assisted and operative procedures and babies transferred from the neonatal unit will be cared for in cots alongside the mother, where general maternal care and certain medical and nursing procedures will be carried out.

Neonatal unit

2.64 A neonatal unit is an area for those new-born babies requiring care which cannot be provided beside the mother. Wherever possible, all neonatal units should be situated adjacent to birthing facilities, to enable ill babies to be transferred quickly and easily. Parents should have unrestricted access to this unit.

2.65 Every maternity department should be able to provide a degree of special care and, while the amount of intensive care to be provided will vary depending upon the size of the hospital, every hospital must be able to provide short-term neonatal intensive care in order to stabilise an infant prior to transfer to a more specialised centre.

2.66 Degrees of neonatal care can be provided and in 1994 the British Association of Perinatal Medicine described the following categories:

1. Intensive care;
2. Special care;
3. Routine care.

Assessment of need

2.67 The proportion of cots designated intensive, special or routine care will vary according to local needs. In its Report on Neonatal Intensive Care published in 1993 the Clinical Standards Advisory Group highlighted that recommendations for intensive care cots range from 0.4 – 1.5 cots per 1,000 births. For special care, 4.5 special care cots per 1,000 births have been recommended. However, there is likely to be considerable local variation depending upon the level of service provided and whether the unit operates as a tertiary referral centre. Purchasers and providers must therefore assess their requirements on the basis of local needs. The schedule of accommodation in Chapter 6 of this Note comprises five sizes of units ranging from six to 20 cots depending upon the size of the unit being planned.

Transitional care area

2.68 In designing neonatal facilities, the development of a transitional care area in which infants who require short term observation or a brief episode of special care can be looked after by the mother under extra supervision from midwives/neonatal nurses may be considered. The size of such a facility would depend upon assessment of local needs in relation to the level of neonatal care being provided within the hospital.

The tertiary referral centre

2.69 Some intensive care facilities will have been designated as tertiary referral centres and will accept transfers of very sick infants requiring intensive care which cannot be provided at a more local level. In assessing the need for neonatal intensive care cots, the need to staff and equip a unit to cater both for infants born within the hospital and for those delivered in outlying hospitals must be considered. Such a tertiary referral centre requires to have a fully equipped neonatal transport service.

Service planning

2.70 A forecasting model for estimating the number of maternity beds required in Scotland until 2001 was prepared by the NHS in Scotland Management Executive and issued to all Health Boards and NHS Trusts providing maternity services in Scotland on August 12 1994. The model is primarily aimed at "purchasers" of services. No such model is in use in England and Wales.

2.71 The local planning of maternity provision should take into account local factors and be based upon a statistical analysis of local needs.

General planning requirements

2.72 The planning team should aim to achieve the optimum use of space without detriment to the needs of mothers and staff and to the efficient functioning of the spaces involved. The critical dimensions which define the space required by staff when conducting uncomplicated, complicated and operative deliveries are of vital importance – see Appendix 1: Egonomic diagrams.

Control of cross-infection

2.73 Project teams should follow the local policy for the care of women and babies requiring source and protective isolation. No arrangements for such isolation have been incorporated in this Note.

2.74 The unit's design should take into account the need to prevent the risk of cross-infection. It is important that there is adequate space within the unit to avoid overcrowding.

3.0 Specific functional and design requirements

Introduction

3.1 This Chapter comprises specific functional and design requirements for:

A. the entrance;

B. the maternity antenatal/postnatal clinic suite and ultrasound facilities;

C. day assessment facilities and early pregnancy unit;

D. in-patient accommodation with birthing facilities, an obstetric operating theatre suite, and high dependency care;

E. the neonatal unit.

A ENTRANCE

3.2 The entrance to the department should be designed to provide a welcoming, non-clinical environment and located to provide easy access. Automatic sliding doors will assist the access of disabled people in wheelchairs and also mothers with children. A method of reducing the amount of dirt carried by footwear into the department should be incorporated into the design of the lobby. Toilet facilities should be provided in this area. It may also be necessary to provide a pushchair/pram parking area, with security lock-up devices either in or adjacent to the lobby area.

B MATERNITY ANTENATAL/ POSTNATAL CLINIC SUITE

3.3 Facilities may be required to meet the needs of the following services:

a. antenatal and postnatal assessment and monitoring;

b. ultrasound;

c. infant follow-up (dependent on the local provision of paediatric services);

d. preparation for parenthood and health education.

Reception and waiting

Reception desk

3.4 The reception desk should be in a prominent position facing the entrance and overlooking the main waiting area. The counter needs to be stepped so that a person in a wheelchair can see and speak easily to the receptionist. The desk requires sufficient working space for each receptionist who will welcome a woman and dea with appointments and transport facilities. The reception desk will be linked by computer to all areas giving care on an out-patient basis. Space is required for a computer terminal and associated equipment – see paragraph 4.11.

Waiting space

3.5 The waiting space should have a pleasant and informal atmosphere. Many pregnant women will be accompanied by a friend or relative and may have small children with them. The area should be planned so that it can be subdivided into separate waiting spaces if wished.

3.6 There should be facilities for young children to play under supervision. A staffed crèche may be considered (see paragraph 3.35). Public telephones and a snack bar for light refreshments will also be required.

WCs

3.7 WC facilities (including provision for hand washing) should be located conveniently for the waiting area, consulting/examination rooms and the ultrasound room. These WCs should not be directly overlooked by the waiting area.

Specimen WCs

3.8 Two specimen collecting WCs, one with wheelchair access, should be provided adjacent to the room where the testing of specimens of urine takes place. There should be specimen collection hatches between the WCs and one testing room.

Nappy change room

3.9 A room with nappy changing facilities is required near to the children's play area in the waiting space.

Seating, and facilities for the disposal of waste, are required. Hand-wash facilities should also be provided.

Infant feeding room

3.10 A room where a baby can be breast or bottle-fed, in privacy, should have direct access from the waiting area. Seating, and facilities for the disposal of waste, are required. Hand-wash facilities should also be provided.

Consulting, examination and treatment

Consulting and examination rooms

3.11 This guidance assumes that the entire antenatal visit will take place in one area.

3.12 Wherever practicable a general purpose consulting and examination suite (C/E room) should be used. The combined C/E room will be large enough to accommodate electronic monitoring and diagnostic equipment. The examination couch should be screened by a curtain to allow privacy. A suitable room layout is illustrated in Figure 1. This arrangement provides an informal ante-room.

3.13 It is important for staff to have easy access to groups of C/E rooms, but this should not compromise patient privacy. Adequate sound attenuation is required and there should be an "engaged" indicator on the door. The rooms should not be curtained cubicles. A handwash basin is essential, so is an adjustable lamp serving the couch along with tables and chairs for consultation. A small cupboard, with a worktop/writing surface, for the storage of items of equipment and sterile packs is desirable.

Interview/discussion room

3.14 This room should provide a suitable atmosphere for discussion with people who may be distressed. Privacy is essential.

Support spaces

Clean utility/preparation room

3.15 The clean utility/preparation room will be used for storing all supplies, both clean and sterile and for preparing and storing dressing trolleys used in the C/E rooms and a treatment room (if provided). Trolleys serve the dual purpose of worktop and conveyance. The room should be lockable and near the staff office. Secure storage is necessary for drugs, including controlled drugs, medicines, lotions and a small working stock of clean and sterile supplies. Space will be needed to assemble and prepare equipment for clinical procedures and to park the medicine trolley. A clinical wash-hand basin will be required.

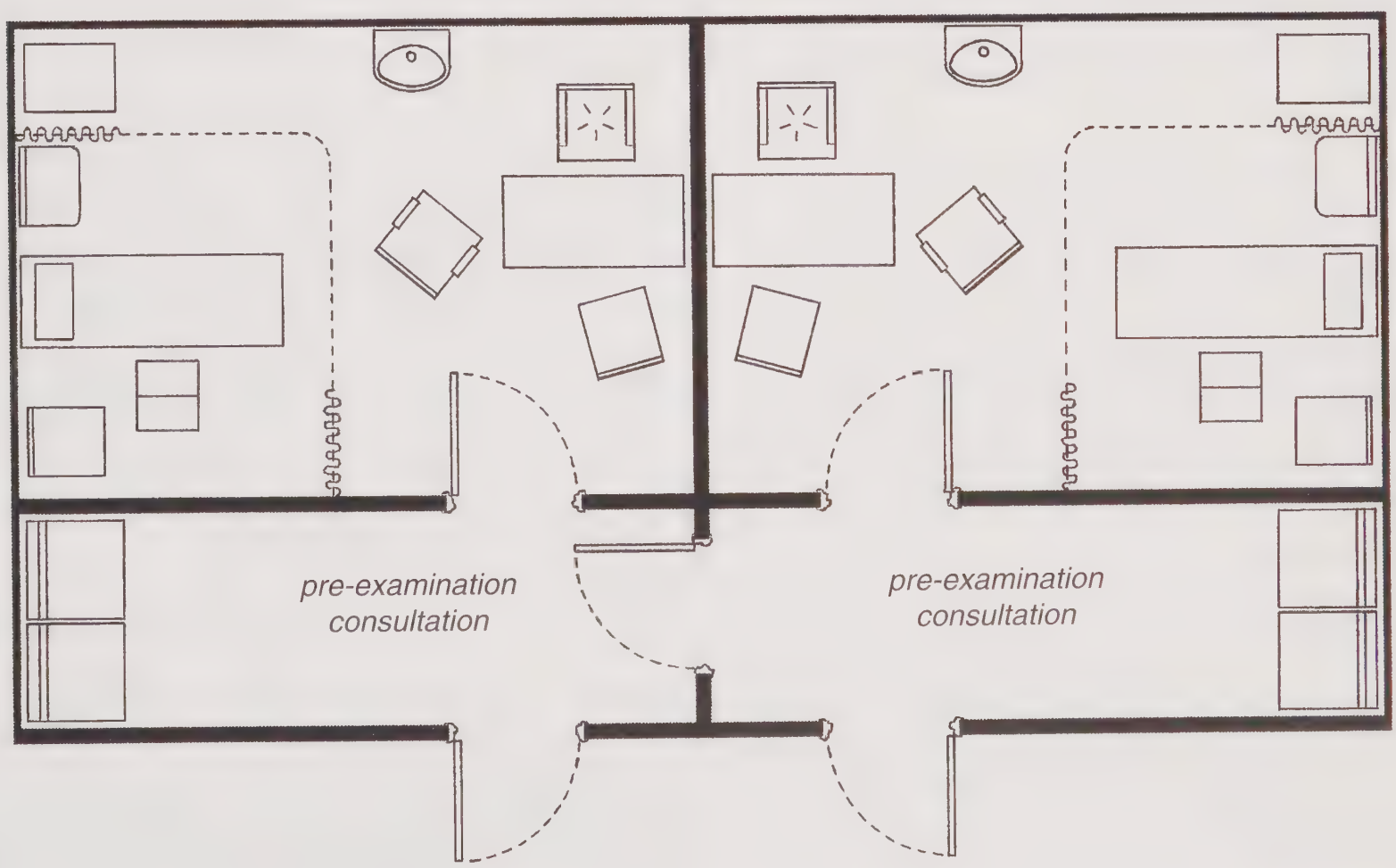


Figure 1 Example of wide frontage combined consulting/examination rooms with consultation spaces

Dirty utility/disposal room

3.16 A combined dirty utility/disposal room is required and should be located adjacent to the clean utility room with easy access from the C/E rooms and a treatment room (if provided). Facilities are required for testing specimens of urine and recording results and for the disposal of liquid waste. For patients who bring specimens with them, the room should have a countertop or hatch to the corridor for the reception of these specimens. Provision is needed for the cleaning of dressing trolleys and other items of equipment. A clinical wash-hand basin will be required.

Domestic serices/Cleaner's room

3.17 The domestic services/cleaner's room is the base from which domestic service staff provide the immediate day-to-day cleaning service. It should include storage for cleaning materials and equipment in daily use and facilities for the routine servicing and cleaning of equipment. The room should be well lit and ventilated so that equipment can dry quickly. Bulky equipment has to be moved in and out of the room and this should be taken into account in its location.

Equipment store

3.18 A general purpose store, sited near the C/E rooms, is required for items to be stored on shelves eg disposables, hardware, stationery etc. In addition there should be space to house mobile equipment eg wheelchairs, monitoring devices, paper covers for C/E couches etc.

Linen store

3.19 A linen store is required.

Switchcupboard

3.20 A departmental switchcupboard housing the main isolators and distribution fuse switchgear should be:

a. accessible directly from a circulation area (access space may be part of the circulation area);

b. sited away from water services;

c. lockable.

3.21 Where possible the cupboard should be sited within the department. There should be clear and safe access for maintenance staff and care should be taken to ensure that safety is not compromised, during maintenance, from passing traffic or the opening of adjacent doors.

Office accommodation

Medical staff office

3.22 This room will be used by two medical staff to carry out clerical and administrative tasks. The office should contain two workstations, telephones, stacking and easy chairs, bookcases and a cupboard. Sound attenuation sufficient to prevent conversation being overheard is essential. It is also important to have as much natural daylight as possible.

Midwife-in-charge office

3.23 This office should contain one workstation and seating for at least two other people. Other furnishings will be similar to those described in paragraph 3.22.

Multi-purpose office

3.24 This room may be used on a sessional basis by community primary health care personnel, community midwife, health visitor, medical social worker and dietician etc. One workstation is required.

General office

3.25 This office is the administrative centre of the antenatal/postnatal clinic suite. Computers and workstations are required for two or three administrative staff. Medical records will be stored here. When records are not held personally by women then current records must be readily available and accessible day and night; mobile fire resistant filing cabinets may be necessary so that the records can be transferred to the birthing area when the antenatal/postnatal clinic suite is closed. Records other than those in current use will be stored in the records department of the hospital. The general office should be located adjacent to the reception desk.

3.26 For further guidance on office accommodation refer to HBN 18 – 'Office accommodation in health buildings'.

Essential Complementary Accommodation

Preparation for parenthood room

3.27 It may be necessary to provide a room capable of accommodating up to 20 people, for preparation for parenthood teaching sessions where local community facilities are not used for this activity. The preparation for parenthood store (paragraph 3.28) may be located within or adjacent to the preparation for parenthood room.

Preparation for parenthood store

3.28 A store is required for the storage of "biscuit" mattresses, equipment, teaching aids and information used during relaxation, preparation for parenthood and health education sessions. The door should be lockable for safe-keeping of valuable teaching aids. The room should be adjacent to the space where preparation for parenthood is carried out.

Staff rest room/beverage bay

3.29 Rest room facilities are required where staff can relax and take beverages. Rest rooms should have windows with a pleasant outlook and be comfortably furnished.

3.30 The rest room should include a beverage bay with facilities for preparing beverages for staff, for washing and storing crockery and cutlery, for storing a limited quantity of dry goods, and for the refrigerated storage of milk, etc.

3.31 Equipment should include a stainless steel sink and drainer, a refrigerator, an electric water boiler, and a worktop with cupboards.

Snack bar

3.32 A tea bar to supply beverages and light refreshments should be provided adjoining or within the main waiting area, unless such facilities are easily accessible elsewhere. When this is run by a voluntary organisation it will be necessary to have a small storage room ensuite.

Staff changing

3.33 Secure coat and cloak-hanging facilities and individual handbag lockers may be required. Two rooms should be provided: one for female staff and one for male staff. WCs, hand washing and grooming facilities should be provided, ensuite or adjacent to the cloakrooms. (See HBN 41 – 'Accommodation for staff changing and storage of uniforms' for options on local or centralised changing accommodation.)

Optional accommodation

Treatment room

3.34 A treatment room may be required for diagnostic and clinical procedures which may include specimen collecting and cardiotocography. A couch and two chairs will be needed and the facilities will include a clinical wash-hand basin and an adjustable examination lamp. A storage cupboard with a worktop over can provide a writing surface. Adequate space is required for mobile surgical trolleys, monitoring and diagnostic equipment and machines.

Crèche facilities

3.35 Project teams may wish to consider the provision of a crèche where children can play or read under supervision. The play area should include toys, display panels, writing surfaces and books (with appropriate storage) for children of all ages. The crèche should include a beverage bay, and access to sanitary facilities is required. A cloakroom and store are also required. A staff base should also be provided. If possible, the crèche should have access to an external play area (see HBN 45 – 'External works for health buildings').

ULTRASOUND SUITE

3.36 Accommodation required will depend not only on the number of deliveries in a particular unit but also on case mix and the ultrasound scanning policy for the population served by that unit. An ultrasound scanning room can cope with approximately 5,000 mixed routine examinations per year. Booking/dating scans can readily be carried out in out-reach clinics. Indeed, with appropriately trained staff and suitable portable equipment, a variety of procedures, including ultrasound scanning, can be performed in out-reach settings. The scanning policy adopted by a unit has implications for the size of the suite. The use of portable ultrasound equipment throughout the maternity department will significantly influence the workload of the ultrasound suite itself.

3.37 There should be facilities for:

a. reception/secretary/typist area;

b. sub-waiting area;

c. changing cubicles;

d. scanning rooms;

e. toilets;

f. offices;

g. staff facilities;

h. storage.

Waiting

Waiting space

3.38 Women will be directed to the ultrasound suite from the reception desk in the antenatal/postantal clinic suite. A sign indicating that this space is the waiting area for the ultrasound suite will be required.

3.39 The size will be determined by the estimated throughput of women who may be ambulant or in wheelchairs. Cold water drinking facilities will be required. Privacy must be ensured for partially clothed patients and the sensitive management of women who may be miscarrying.

Consulting, examination and treatment

Changing cubicles

3.40 At least one cubicle should be able to accommodate wheelchair users. Cubicles must be in close proximity to the toilet area.

Scanning room

3.41 However small the maternity unit, two scanning rooms will be needed to:

a. allow invasive procedures eg amniocentesis to be performed, whilst routine scanning continues in the other room;

b. provide back-up at the time of scanning machine servicing or failure.

3.42 Both scanning rooms should be equipped with couches, seating for sonographer and accompanying persons, a dimmable lighting system, a mobile light source, a writing surface and shelves and cupboards for storage of equipment.

3.43 There should be adequate space to allow for invasive procedures and for the movement of trolleys and beds. Facilities are required for hand washing and cleansing instruments.

3.44 Adequate ventilation to prevent overheating of the ultrasound machine and the facility to darken the room via window blackout and the dimming of artificial lighting are also required.

WCs

3.45 One toilet per scanning room and one for staff is required. One should be suitable for wheelchair users.

Support spaces

Storage

3.46 Space is required for bed linen, paper roll tissue, acoustic jelly, equipment for invasive procedures, stationery, etc.

Office accommodation

General office

3.47 An office is required for carrying out the administrative and clerical work generated by the ultrasound department. A workstation is required, with a desk, chair, telephone, computer, and storage for books, files and stationery.

Radiographers' office

3.48 Office accommodation is required in which radiographers and/or radiologists can carry out paperwork, report, teach and make telephone calls. Accommodation will be required within the ultrasound department if this is separate from or not in close proximity to the main X-ray department.

Essential Complementary Accommodation

Staff changing

3.49 Secure coat and cloak-hanging facilities and individual handbag lockers may be required. Two rooms should be provided: one for female staff and one for male staff. WCs, hand washing and grooming facilities should be provided, ensuite or adjacent to the cloakrooms. (See HBN 41 – 'Accommodation for staff changing and storage of uniforms' for options on local or centralised changing accommodation.)

Staff rest room/beverage bay

3.50 Refer to paragraphs 3.29 – 3.31.

C DAY ASSESSMENT UNIT

3.51 There should be facilities for:

- reception/waiting/toilet facilities;
- monitoring and sitting area;
- a staff base and records;
- consulting and examination.

Waiting

3.52 For guidance on waiting areas and toilet facilities refer to paragraphs 3.5 to 3.7.

Consulting, examination and treatment

Monitoring and sitting area

3.53 The monitoring area should have day beds/reclining chairs for performing cardiotocography. Sufficient space for the cardiotocography and ultrasound machine should be provided by the bed or chair. Curtains should be provided round each area. A sitting area should also be provided where women can sit comfortably and relax during the assessment, particularly where blood pressure is being checked over several hours. The sitting area should include comfortable seating, coffee table, television/radio.

Beverage bay

3.54 Facilities for providing coffee/tea and snacks are required for those women detained throughout the day. The beverage bay should be en-suite to the monitoring and sitting area. Equipment should include a stainless steel sink and drainer, a refrigerator, an electric water boiler, and a worktop with cupboards.

Consulting/examination room

3.55 The consulting and examination room required is identical to those required for the antenatal/postnatal clinic suite as detailed in 3.11 – 3.13 and Figure 1.

Staff base

3.56 This is the base at which midwives may receive, read or give instructions and record information in the records held there. Nurse-to-nurse calls should be centred here. The staff base should be wired as the centre for the patient-to-staff and a staff call system within the area and central monitoring equipment for telemetry if used. There should be good communication links, including telephones, to laboratories and referrers. A computer terminal and associated equipment with a link to laboratories and medical records will be required. The security of records and noise associated with equipment should be considered. The staff base should be located near the utilities.

Support spaces

Switchcupboard

3.57 Refer to paragraph 3.20.

Essential Complementary Accommodation

3.58 This accommodation may be shared with the antenatal/postnatal clinic suite dependent on its location relative to day assessment facilities.

Clean utility/preparation room

3.59 A clean utility room is required for the storage of all supplies, both clean and sterile, necessary for the care and treatment of women. It provides space for the preparation and assembly of items of equipment for diagnostic and therapeutic procedures. In addition, it provides storage space for "dressings" trolleys etc required to transport equipment to the point of use. Trolleys serve the dual role of worktop and conveyor. Secure storage is necessary for drugs, including Controlled Drugs, medicines, lotions and a small working stock of clean and sterile supplies.

Dirty utility/test room/disposal room

3.60 A test room is required for testing specimens of urine and disposal of liquid waste. This test room should have easy access for women who often bring their own urine specimens for checking. This should be adjacent to the WC facilities so that women can also obtain specimens for investigation in easy reach of the test room. A clinical wash-hand basin will be required.

Staff rest room/beverage bay

3.61 Refer to paragraphs 3.29 – 3.31.

Domestic services/Cleaner's room

3.62 A cleaner's room may be required for storage of service equipment similar to 3.18.

Office

3.63 A medical/midwifery office is required within the Day Unit to allow private discussion of problems by medical and midwifery staff. This should include facilities for telephone liaison with general practitioners and other professionals.

Equipment store

3.64 In a day assessment unit most of the beds/couches used for foetal monitoring will have a cardiotocography machine adjacent to the bed therefore the requirement for additional storage space will be minimal. However, if the disposition of rooms dictates that such machines are to be moved from bed to bed, then a storage area would be required appropriate to the number of machines. Similarly, if ultrasound machines are based in the unit, they may have a static position close by the assessment area. Venepuncture equipment and a wheelchair may also be stored here.

Linen store

3.65 Storage space is required for linen covers.

Optional accommodation

Crèche facilities

3.66 Women attending the day assessment unit may need to remain in the unit for several hours. Project teams may wish to consider the provision of a supervised play area for children. See paragraph 3.35.

EARLY PREGNANCY UNIT

Waiting

3.67 For guidance on waiting areas, refer to paragraphs 3.5 – 3.7.

Consulting, examination and treatment

Staff base

3.68 A midwifery/nurse staff base is required for regular observation of women, co-ordination of movements to theatre and in-patient beds and the prescription of drugs.

Assessment room

3.69 Assessment area is required for blood sampling and ultrasound scanning.

Day room

3.70 A small day area for women to sit in, with coffee table, television/radio should be provided.

Multi-bed bay

3.71 The beds within this unit must be capable of providing a full range of medical and nursing services and serviced as a bed on an acute general ward. This would include access to oxygen points, suction, electrical outlets at each bed and sufficient space for resuscitation in the event of a collapsed patient. Evacuation of uterus may be performed surgically so accessibility to a general theatre is required, however, medical evacuation may become increasingly popular with advances in the medical management of these problems.

3.72 Each multi-bed bay should include an en-suite bathroom with WC and bidet.

Beverage bay

3.73 Facilities for providing coffee/tea and snacks are required for those women detained throughout the day. The beverage bay should be en-suite to the multi-bed bay. For guidance on equipment requirements refer to paragraph 3.54.

Interview/discussion room

3.74 Private rooms are required as women and their partners may need personal support and counselling after a pregnancy loss.

WCs

3.75 Two WCs should be located centrally.

Assisted shower/WC

3.76 In addition to the bathroom provided en-suite to the multi-bed bay a second, assisted WC and assisted shower should be provided in a central location.

Essential Complementary Accommodation

Clean utility/preparation room

3.77 A clean utility/preparation room is required for the storage of all supplies, both clean and sterile, necessary for the care and treatment of women. It provides space for the preparation and assembly of items of equipment for diagnostic and therapeutic procedures. In addition, it provides storage space for "dressings" trolleys etc required to transport equipment to the point of use. Trolleys serve the dual role of worktop and conveyor. Secure storage is necessary for drugs, including Controlled Drugs, medicines, lotions and a small working stock of clean and sterile supplies.

Dirty utility/disposal room

3.78 The dirty utility/disposal room should be capable of dealing not only with waste but also the products of conception, passed spontaneously or after medical treatment. Specimen containers for pathology and subsequent transfer to the laboratory should be stored here. A clinical wash-hand basin will be required.

Domestic services/Cleaner's room

3.79 A domestic service room may be required for storage of service equipment similar to 3.15.

Staff changing

3.80 Secure coat and cloak-hanging facilities and individual handbag lockers may be required. Two rooms should be provided: one for female staff and one for male staff. WCs, hand washing and grooming facilities should be provided, ensuite or adjacent to the cloakrooms. (See HBN 41 – 'Accommodation for staff changing and storage of uniforms' for options on local or centralised changing accommodation.)

Staff rest room/beverage bay

3.81 Refer to paragraphs 3.29 – 3.31.

Optional accommodation

Crèche facilities

3.82 Women attending the early pregnancy unit may need to remain in the unit for several hours. Project teams may wish to consider the provision of a supervised play area for children. See paragraph 3.35.

D IN-PATIENT ACCOMMODATION INCLUDING BIRTHING FACILITIES, OPERATING THEATRE SUITE AND HIGH DEPENDENCY CARE

3.83 Facilities are required for:

- direct admission of women;
- observation and assessment of pregnant women;
- uncomplicated labour and births;
- operative obstetric procedures;
- resuscitation of the baby;
- observation and recovery of infants;
- observation and recovery of mothers;
- fathers, relatives and friends;
- medical, midwifery, nursing and other staff;
- the clinical training of midwifery, nursing and medical staff.

Reception and waiting

Reception desk

3.84 A reception desk inside should be located to enable all visitors entering or leaving the unit to be monitored.

3.85 Refer also to paragraph 3.4.

Waiting area

3.86 For guidance on waiting areas and toilet facilities refer to paragraphs 3.5 – 3.7.

Consulting, examination and treatment

Consulting/examination room

3.87 A room is required for initial medical examination and midwifery assessment of women arriving as in-patients. A general purpose consulting room similar to that in the antenatal/postnatal clinic suite should be suitable.

Birthing rooms

3.88 These rooms will be used for all stages of labour including recovery following birth. Transfer to the obstetric theatre should be easily achieved. All birthing

rooms should be suitable for routine resuscitation procedures. Standard birthing rooms referred to in this Note are based on the concept that most mothers will occupy these rooms during the entire period of their stay. THEY ARE REFERRED TO AS LDRP (LABOUR/DELIVERY/RECOVERY/POST PARTUM) ROOMS – see Figure 2. A larger LDRP room will be required for a mother who is a wheelchair user or when a multiple birth is expected. A mother may be accompanied by a wheelchair user. The room should be located near to the theatre.

3.89 Women will be admitted directly to an LDRP room. They may be walking, in a wheelchair or on a trolley. The room should be designed in as homely a manner as possible with furniture and furnishings of a domestic nature. Bedhead services may be masked by sliding screens or pictures. Windows providing a view to the outside world are essential to create this atmosphere – see paragraphs 4.42 to 4.44.

3.90 The size and ergonomic layout of birthing rooms should be suitable for the following:

a. a delivery on a birthing bed with the infants' cot and resuscitation equipment nearby. Adequate space and furniture for the mother's partner is required. Three staff may be present in this area;

b. an operative vaginal delivery with the mother in the lithotomy position under local or epidural anaesthesia with obstetric, anaesthetic and paediatric medical and midwifery staff in attendance. There should be adequate space for any procedures necessary for resuscitation and/or the maintenance of a clear airway;

c. the insertion and maintenance of epidural anaesthesia during labour;

d. space for maternal and foetal monitoring machines, intravenous therapy, or ultrasonic aids when in use. This equipment will be stored nearby and brought into the room as and when needed;

e. rooms should be adequately insulated for sound and have mechanical ventilation to control the level of waste anaesthetic gas pollution – see paragraphs 5.35 – 5.37;

f. a sink with two lever-action taps is required for staff to scrub up before obstetric and clinical procedures.

3.91 Some women may prefer not to give birth on the bed. The room should be designed so that furnishings may be rearranged easily according to individual preferences.

3.92 The doors to the room should be wide enough for a bed with attachments to pass through. If a viewing panel is provided in the door, the privacy control must be within the room.

3.93 The following facilities should also be provided and concealed where appropriate:

- at the head of the bed, a bedhead unit with mother-to-staff and inter-staff communication systems, radio with earphones and bedhead light with dimming facility;
- eight switched electric socket outlets near the bedhead, two piped oxygen outlets, nitrous oxide, medical vacuum and premixed nitrous oxide/oxygen, anaesthetic gas scavenging terminal;
- in the area designated for the baby, four socket outlets, also piped oxygen and medical compressed air and vacuum outlets;
- resuscitation facilities for babies;
- supplementary heating for the baby;
- a worktop with cupboard;
- adequate local lighting should be provided together with an appropriate examination lamp which must be automatically battery maintained; the lighting must be capable of being dimmed;
- a television aerial point and a telephone outlet;
- a computer terminal in each room.

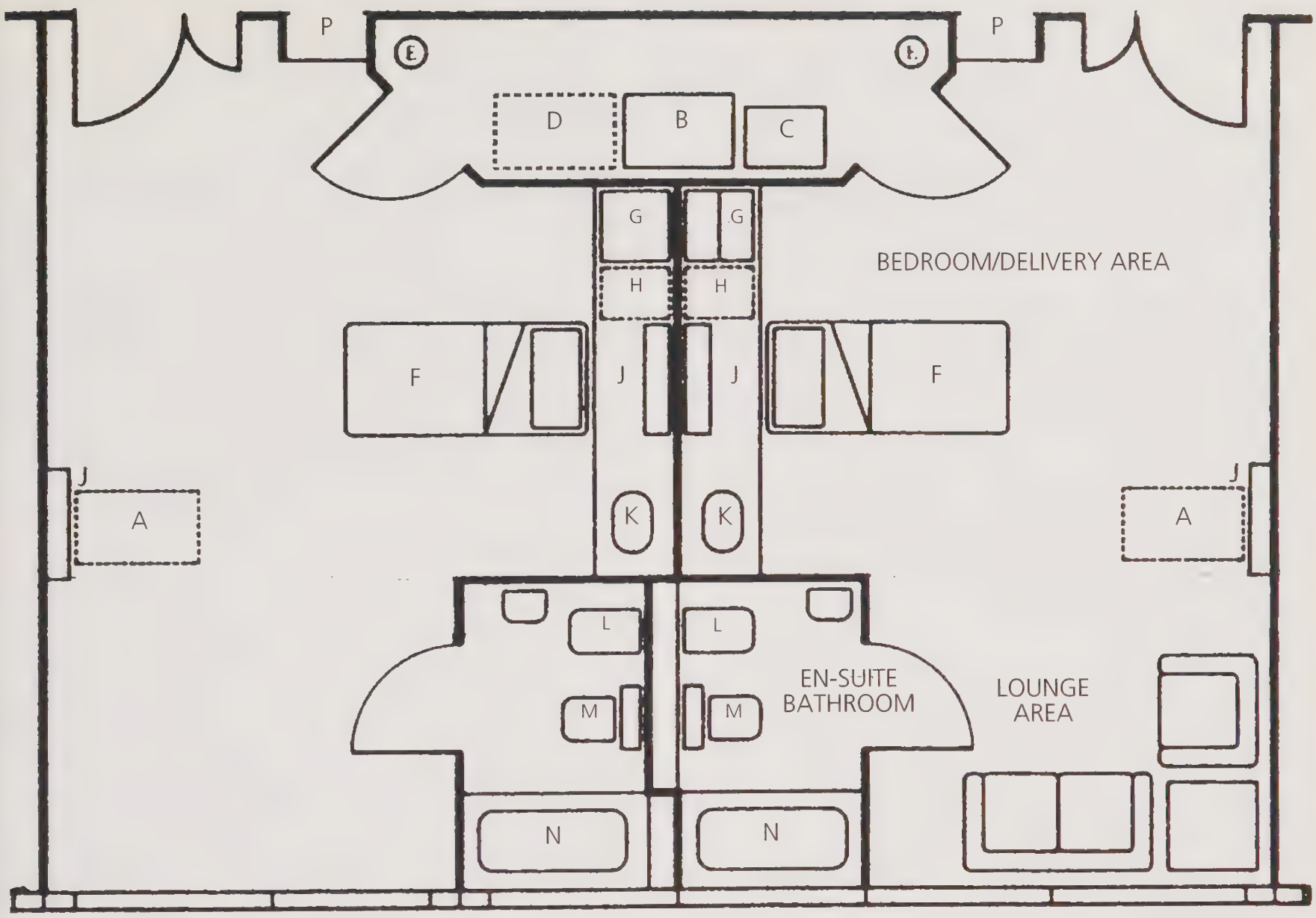
3.94 All rooms should have windows with blinds and one-way vision. Rooms should be quiet and restful and pleasingly decorated. A sitting area with easy or reclining chairs and a coffee table should be provided in all LDRP rooms. Ensuite sanitary facilities are also required. (See Figure 2.)

LDRP sanitary facilities

3.95 For each LDRP room ensuite WC, bidet and shower/bath facilities should be provided. An assisted bathroom with a suitably large bath should be an ensuite facility with one LDRP room for use by a disabled person. A second assisted bathroom should be centrally located for use by women in both the LDRP and in-patient bed areas.

Medical equipment store

3.96 For every pair of LDRP rooms a shared store for equipment described in paragraph 3.90 d, directly accessible from each, should be provided.



A Resuscitaire as required

B Instrument trolley

C Epidural trolley

D Mobile Foetal Monitor

E Kick bucket

F L/D/R bed

G Wardrobe

H Bedside cabinet

J Medical gases panel

K Clinical basin

L Bidet

M W.C.

N Bath/shower

P Pass through facility for clean and dirty linen

Figure 2 Standard Labour/Delivery/Recovery/Post Partum (LDRP) Room

High dependency care

3.97 High dependency care of women with haemorrhage, severe pre-eclampsia and eclampsia who may develop major complications affecting fluid and electrolyte balance will sometimes be required. These women will need intensive observation, treatment and nursing care and may require invasive cardiovascular monitoring.

3.98 LDRP rooms are sized and serviced sufficiently to enable this level of care. Rooms used for high dependency care should be designated as such and adjacent to the operating theatre suite but need not be used exclusively for high dependency.

3.99 The number of beds to be available will depend on local circumstances but should not be fewer than one for 2,000 births. The room(s) may need to be darkened and should not be disturbed by external noise.

3.100 Additional monitoring equipment to enable continuous display of arterial oxygen, saturation ECG and invasive vascular pressures will be required. An automated non-invasive blood pressure device should also be provided. This may be accommodated on a fixed rail, shelf or trolley. Equipment for emergency intubation and ventilation prior to the transfer of a woman to an intensive therapy unit should be accessible.

3.101 Consideration should be given to a closed circuit TV link to the special baby care unit to enable mothers to view their babies.

In-patient bed spaces

3.102 In general, in-patient beds may be all in single rooms or a combination of single and multi-bed rooms.

3.103 Each bed space should be provided with:

a. a variable-height bed, a bedside locker or locker wardrobe, over-bed table, an easy chair and space for a baby's cot;

b. a bedhead luminaire;

c. a bedhead services panel incorporating: electrical socket outlets; luminaire control switch; nurse call reset button/indicator lamp; staff/staff emergency pull switch; socket for patient handset; patient handset storage bracket; radio TV stethoscope headset outlet (may be on handset control unit);

d. patient handset control unit incorporating: nurse call button; reassurance light; luminaire switch; radio/TV volume control knob; radio/TV selector switch;

e. oxygen and vacuum outlets;

f. one compressed air outlet in each single bed room, and two outlets in each multi-bed room (optional service).

Single bed rooms

3.104 All single bed rooms should be provided with a wash-hand basin for staff.

3.105 In each single bed room there should be a WC, a wash basin, bidet and a shower. For economy of space these facilities should be contained in one compartment per bedroom. It must be possible for sani-chairs to be pushed easily and without turning, into WCs. The wet shower area of the compartment should be separated by a curtain from the remainder which should serve as the drying area. There should not be a step between the wet and dry areas, but there is a requirement for sufficient slope of the floor to the outlet, so as to assure proper drainage and prevent spillage of water into the dry areas.

Multi-bed rooms

3.106 Each bedspace should have space for a cot and be separable by curtains to provide a degree of privacy. Curtains should be shadow-proof, flame retardant and if suspended from ceiling track, have a net or scalloped inset heading to ensure ventilation and light when drawn. Particular attention should be paid to the location of windows relative to beds. Windows placed between beds should be so located that women do not suffer from draughts. Lower floor and upper floor window areas should be the same, except where the upper floor is provided with clerestory or roof lights, in which case the window area may be proportionately reduced. Solar gain, down-draught, leaks and the noise of rain are problems commonly associated with roof lights, but all these are soluble. Wardrobes should be so placed that they do not block the light or view.

3.107 Each multi-bed room should include a small day area at the window and a wash-hand basin for staff use.

3.108 In multi-bed rooms it is convenient to provide a separate WC compartment and a shower compartment both opening off a lobby from the bedroom. Thus two women may use the facility at once and the woman showering does not prevent others from using the WC. Each compartment should have a wash basin. In the shower compartment there must be no step between wet and dry areas (the latter will contain the wash basin) but there must be sufficient slope to confine the water to the wet area. Both compartments should permit assisted use when required.

Assisted bathroom

3.109 Women using an assisted bathroom may arrive in a wheelchair. Staff assisting in bathing and associated activities may also administer treatments: a variable height peninsular bath is essential. Space must be sufficient to accommodate three staff and permit the manoeuvring of support equipment such as a hoist. The bathroom should also contain a WC and hand basin. The cord of the patient nurse call system should be easily identifiable, accessible from the wet area and descend far enough to be within the reach of a woman who has fallen or collapsed. The floor surface should be slip resistant. The gradient of the floor of the wet area should ensure effective drainage to the waste outlet, thereby preventing ponding. Ventilation should preclude excessive heat, humidity and odours.

Staff base

3.110 Staff bases should be located to suit the layout of LDRP rooms, caesarean rooms and in-patient beds. One staff base should however overlook the entrance to the suite of LDRP rooms. Staff bases should be equipped for storage of records of women in labour, and current antenatal records when the out-patient suite is closed. Controlled drugs may also be stored and telephones provided.

3.111 Staff bases should be wired as the centre for the patient-to-staff and a staff call system within the area and central monitoring equipment for radio telemetry. The night entrance doorbell will be channelled through to the staff base. It should incorporate a facility for transferring a nurse-to-nurse emergency call to another manned point – see also HBN 40 – 'Common activity spaces' Volumes 1 to 5. A computer terminal and associated equipment should be located at the staff base.

Neonatal resuscitation room

3.112 There should be room and facilities to resuscitate up to three infants at a time. The neonatal resuscitation room should be adjacent to the LDRP rooms and at least 4m ˘ 6m. It should have a thermal regulation system which maintains a room temperature between 26 and 28°C. The room should have a sink with elbow-operated or foot-operated taps. There should be at least two resuscitaires and a dedicated space for a third (mobile) neonatal resuscitaire. Each space requires four electric sockets and there should also be four other sockets elsewhere in the room. There should be a system for heating towels efficiently. Each resuscitaire should also have access to oxygen and air outlets. Thought should also be given to suction facilities. Strip lighting should be complemented by two spot-light sources. There should be adequate provision of shelving and cupboards, including a security cupboard and a small refrigerator.

Blood bank/blood gas analysis

3.113 Space is required for the blood refrigerator. Space is also required to store and use the equipment required for biochemical tests, such as blood gas analysis, carried out during labour.

Sitting room

3.114 A multi-purpose sitting room is required. Mothers may use this room for reading, relaxation, watching television, receiving visitors and recreational purposes. Owing to the practice of early ambulation following birth the majority of mothers will not be confined to bed. The sitting room provides a change of environment, a place to meet fathers, relatives and their other children or to meet mothers from other bedrooms and enjoy a relaxed setting. The designer should aim to create an environment which is cheerful, comfortable and warm. Appropriate lighting and decorative textures such as pictures and plants can provide a tasteful domestic atmosphere. Finishes and furniture will have an important influence on the room. A variety of easy chairs, bookcases and coffee tables should be provided. It is important for rooms in which women will be sitting to be free from draughts. There should be access to toilets, telephone and pantry/refreshment facilities – refer to paragraph 3.115.

Beverage bay

3.115 A beverage bay in association with the sitting room is required for the preparation of beverages for women, partners and relatives. There should be ample storage for dry goods, crockery and cutlery, and space for a small refrigerator. Facilities for dishwashing and hand washing will also be required.

Treatment room

3.116 The function of a treatment room is to provide an appropriate environment, including privacy, for mothers and babies undergoing procedures which cannot be carried out at the bedside. These include therapeutic, diagnostic and admission procedures (including history taking) and last offices. The room should be located conveniently close to the preparation and disposal rooms.

3.117 Most often mothers will be ambulant but they may be in a wheelchair, on a trolley or on a bed. Therefore, the door width must be sufficient to permit their passage. Door swings should not impede movement or activities within the room. All-round access to a woman on the examination couch is essential. The examination

couch must be mobile so that it can be moved out of the way to allow access to women who need to be treated on a patient trolley or bed.

3.118 This room should be equipped with terminal units for oxygen and for vacuum, an X-ray viewing facility, a mobile lamp, and clinical wash-hand facilities. Clinical quality colour rendering light sources should be provided and walls, ceilings and floors should be of suitable colour and reflectancies. Natural light is not essential; mechanical ventilation will be required.

3.119 All supplies should be stored in the preparation room; the treatment room is not suitable for storage.

Interview/discussion room

3.120 Refer to paragraph 3.14.

Support spaces (serving both LDRP rooms and in-patient bed area)

3.121 This HBN assumes that support spaces serving the birthing areas (other than the operating theatre suite) and the in-patient bed areas are shared. However, for maternity departments with more than 2,500 deliveries per annum utilities and staff facilities will need to be replicated as required. In such circumstances, extra equipment storage would also be required.

Clean utility/preparation room

3.122 The clean utility/preparation room is the storage space for all supplies, both clean and sterile, including clean linen, necessary for the care and treatment of patients. It provides space for the preparation and assembly of items of equipment for nursing, diagnostic and therapeutic procedures. In addition, it provides storage space for "dressings" trolleys etc required to transport equipment to the point of use. Trolleys serve the dual role of worktop and conveyor.

3.123 The storage space for all items kept in the preparation room should be calculated on the basis of the hospital policy on supply and disposal.

Dirty utility

3.124 Dirty utility room functions are unpleasant so they should be accommodated separately from the disposal room. The room also serves as the temporary storage point and testing area for specimens. Bulky items such as bedpans with their carriers have to be stored here, as will equipment for the destruction of disposable bedpans etc. Such equipment may generate significant noise levels and care should be taken to eliminate this. In this room, the products of conception will be collected and examined. A set of scales may be needed to weigh the placenta. Colour-coded disposal bags for the bagging of waste materials should be kept here.

Disposal room

3.125 The disposal room is the temporary storage point for all items of supplies and equipment which have to be removed for cleaning, reprocessing or destruction, eg linen and sterile services department items.

Domestic services/Cleaner's room

3.126 A well-ventilated, secure room is required near the entrance with provision for the storage and daily maintenance of mechanical cleaning equipment and the storage of cleaning materials. Coat hanging and small lockers may be required – see HBN 40 – 'Common activity spaces' Volumes 1 to 5.

Pantry/cook-chill trolley room

3.127 The pantry/cook-chill trolley room should be equipped with facilities for:

- the preparation of beverages and light snacks;
- the checking, recording, etc, of food temperatures prior to serving it to women;
- the filling of women's water jugs;
- the storage of dry goods and a limited amount of crockery and cutlery;
- storing a limited amount of perishable food in a refrigerator;
- mechanical and manual washing-up of a limited amount of crockery and cutlery;
- hand-washing.

3.128 Meals are transported to the in-patient area in trolleys. The cost allowance for the pantry described in this HBN accommodates:

- a central bulk food service, with hot food delivered in bulk; or
- a cook-chill service, with chilled food delivered and held in bulk and then reheated in the trolley in which it has been delivered.

3.129 Facilities for staff who monitor regeneration of cook-chill food to change, securely store clothes and for hand-washing should be included en-suite with the ward pantry. If project teams wish to employ other methods of food service, including cook-chill systems using more than

one trolley or a fixed regeneration oven, catering and other appropriate professional advisers should be consulted. Careful consideration will have to be given to:

- the need for different equipment and its space implications;
- the operational implications of making changes, both at ward level and on a whole hospital basis.

3.130 Space is required for the storage of a general purpose trolley which will be used for the distribution of beverages and water jugs and glasses, etc. It may also be used when dining positions are set with items stored in the ward pantry, such as cutlery and condiments. It is assumed that most items of crockery and cutlery used for main meals will be returned to the central kitchen with the food trolley for washing-up.

Storage

3.131 Storage is required for:

a. bulky mobile equipment;

b. flying squad equipment (if appropriate);

c. defibrillator and resuscitation equipment;

d. domestic cleaning materials, dry stores, underpads, toilet rolls etc;

e. supplies from the sterile services department;

f. linen;

g. a transport incubator (switched socket outlet required);

h. fluids, drugs;

j. patient valuables;

k. spare cylinders;

m. general stock.

Switchcupboard

3.132 Refer to paragraph 3.20.

Facilities for staff (serving both LDRP rooms and in-patient bed area)

Staff rest room

3.133 Rest room facilities are required where staff can relax and take beverages. Rest rooms should have windows with a pleasant outlook and be comfortably furnished. Direct access to the pantry is required.

Pantry

3.134 Facilities are required for staff to prepare beverages and light snacks, for washing and storing crockery and cutlery, for storing a limited quantity of dry goods, and for the refrigerated storage of milk etc. Equipment should include a stainless steel sink and drainer, a refrigerator, an electric water boiler, a microwave oven, a worktop with cupboards, an automatic dishwasher and a hand-wash basin.

Office accommodation (serving both LDRP rooms and in-patient bed area)

Medical staff office

3.135 Refer to paragraph 3.22.

Senior midwife's office

3.136 Refer to paragraph 3.23.

Midwives' office

3.137 Refer to paragraph 3.22.

General office

3.138 A general office is required for administrative and clerical tasks. Medical records will be stored here. This office should be adjacent to the reception desk. Refer also to paragraph 3.25.

Seminar room

3.139 Some space in addition to that which is provided in the education centre will be required for clinical tuition, case conferences and the training needs of midwifery, nursing and medical staff. A seminar room will meet this need. Daylight and a congenial aspect should be a high priority.

OPERATING THEATRE SUITE

Reception lobby

3.140 Women will arrive on a trolley, bed, wheelchair or on foot. The question of transfer to theatre thereafter will depend upon local operational policies. The bed will be held here until required for the woman to be moved to the recovery area.

Clinical areas

Anaesthetic room

3.141 A quiet room in which the general, local or regional anaesthetic is administered to women. It should not be used for minor surgical procedures. An attractive design or scene on the ceiling can help to reassure and relax the woman.

3.142 The room should be a minimum of 15 sqm so allowing space for:

a. the bed, foetal monitoring equipment and maternal infusion pumps, etc;

b. the transfer of a woman to the operating table;

c. the presence of relatives, medical and midwifery staff;

d. clinical procedures such as setting up intravenous infusions, epidural and spinal blocks. Diathermy pads and monitoring equipment may be attached to women.

3.143 There should be piped medical gases and vacuum and adequate switched socket outlets and waste anaesthetic gas scavenging system. Adequate cupboard storage and work-top areas are essential. A lockable cupboard should be provided for storage of Controlled Drugs issued to an anaesthetist for an operating session. There should be one large or two small fridges in each theatre for the storage of drugs, etc.

3.144 A mobile examination lamp is required for some clinical procedures. It is essential that it should be possible to bring the area of maximum illumination to bear on any part of the woman. The work-top should be lit by a concealed source. It should be possible to vary the level of lighting.

3.145 Each set of doors should be capable of standing in the open position and then closed quietly. Privacy and the maintenance of an undisturbed environment are of great importance. Communicating doors should be fitted with a glazed obscurable panel. A clock with sweep second hand should be located in a position visible to the medical staff.

3.146 A sink should be provided for clinical hand-washing and rinsing anaesthesia instruments. Ideally it should be sited at the end of the room opposite to the normal position of the woman's head but may be dependent on room layout. In addition there should be a wash-hand basin for staff.

Operating theatre

3.147 Many women having a caesarean section will have the induction of anaesthesia carried out in this room. However, women often remain conscious during a caesarean section and the colour scheme should therefore promote a relaxing atmosphere. Women may be accompanied by a partner in this case. The room should be large enough for major operating and life saving procedures to be carried out on the mother and for the care and resuscitation of a baby. Double doors should lead from the anaesthetic room and also into the exit corridor – single doors should lead to the disposal room and preparation room. These doors should be wide enough to allow easy passage of beds or trolleys with their attachments, (including sterile drapes) and should be capable of standing in the open position. Doors should be fitted with vision panels: the panels in the doors communicating with the anaesthetic room and exit bay should be obscurable. All doors should close quietly and be capable of standing in the open position. The theatre should be provided with an operating table, adjustable operating lamp, X-ray viewer, piped anaesthetic gases, oxygen and medical compressed air and vacuum and 10 switched socket outlets, for the mother. A waste anaesthetic gas scavenging system will be required.

3.148 A high level of general lighting should be provided together with a special ceiling mounted luminaire to illuminate the operative area. Electrical outlet points must be conveniently sited. The operating lamp must be automatically battery maintained.

3.149 Additional facilities such as lighting controls, X-ray viewing screens with bright spot and dimming, a clock with a sweep second hand and a time elapsed clock with start/reset control, a writing surface and a swab count record board are usually arranged on a theatre control panel where they may be easily viewed by operating staff.

3.150 Appropriate stand-by sterilizing facilities should be available.

3.151 In addition to the space and equipment required for the mother, an area within the theatre should be allocated for the reception and resuscitation of the new-born baby. A resuscitaire or an incubator and an infant resuscitation trolley will be required. Four switched socket outlets, oxygen and medical compressed air and vacuum and wall-mounted examination light are essential.

3.152 Other items of equipment which will be brought into the room and may all be in use at the same time include:

a. intrauterine pressure and foetal heart monitor;

b. anaesthetic machine;

c. ventilator and humidifier;

d. anaesthetic drug and equipment trolley;

e. maternal monitoring equipment, this will include blood pressure, oxygen saturation, ECG, end tidal CO_2 and facilities for measuring central venous pressure and direct arterial pressure;

f. diathermy equipment;

g. syringe pumps – for the administration of drugs and fluids;

h. intravenous infusion stands;

j. obstetric instrument trolley;

k. swab rack and containers for used swabs and soiled instruments.

Scrub-up and gowning room

3.153 This space, accessible from the limited access zone, should lead directly into the operating theatre. Some staff will put on a protective apron and mask before scrubbing-up and then put on a sterile gown and gloves with the assistance of a circulating nurse; gowning can proceed while others are still scrubbing. The number of staff scrubbing simultaneously will vary, but will not usually exceed two. The scrub team should have sight of a clock and, if possible, the theatre within view.

3.154 Storage shelves for sterile packets of gowns and gloves, sufficient for at least one session, should be located conveniently. They should not be over a trolley on which an open gown pack is presented, or exposed to accidental splashing.

3.155 Provision should be made for the collection of used towels and pack wrappers.

Recovery room

3.156 The room should be directly adjacent to the operating room and be air conditioned to ensure the removal of exhaled anaesthetic gases. A recovery room is needed in which the mother can be closely watched while she is recovering from the effects of both general and regional anaesthesia. In designing this area, which should provide a minimum of two places per operating table, provision must be made for the easy movement of stretchers and beds. Oxygen and medical vacuum and six switched electric socket outlets should be provided to each place.

3.157 A staff emergency call button should be provided in case of, for example, a cardiac arrest. There must be adequate storage for consumables, equipment and – subject to local policy – drugs.

3.158 Clinical wash-hand facilities are also needed and space for a small table or desk for the patient's records, large items of equipment eg ventilator, anaesthetic machine and equipment to intubate the patient etc. Fixed curtain rails should be provided for the privacy of mothers.

3.159 In all LDRP rooms, the anaesthetic room, and the operating theatres, a prominent notice should be displayed warning that these spaces are unsuitable for the administration of flammable anaesthetics.

3.160 Project teams are reminded that if they consider that there are exceptional local circumstances which might justify the potential use of flammable anaesthetic agents then this has significant implications. There will be the additional expenses of the initial provision and subsequent systematic maintenance, including scheduled electrical resistance testing, of anti-static flooring. In addition, clothing, anaesthetic machines and all electrically-powered equipment or parts of equipment (this includes ventilators, ECG and other patient monitoring equipment) used within the "Zone of Risk" must have been positively identified as suitable for such use. Many modern anaesthetic machines and other items of patient monitoring equipment are not suitable for such use. More detailed guidance on these aspects is given in Safety Information Bulletin No. 37 SIB(87)79, dated November 1987.

Support spaces (used exclusively by operating theatres)

Dirty utility/disposal room

3.161 This space should be adjacent to the theatre. Here equipment used in the theatre is cleaned; fluids are emptied; mops and buckets required for mopping the theatre floor between cases are stored; sealed and labelled disposal bags, bagged linen, bagged waste and other miscellaneous items generated during an operative procedure await collection. Surgeons wishing to examine specimens often do so in this space. Clinical wash-hand facilities should also be provided.

3.162 A slophopper sink and drain for filling and emptying buckets and examining specimens is required. The height and position of the slophopper should be convenient for the lifting and emptying of buckets.

3.163 Shelves for the storage of disposal bags and specimen containers, and hook clips for the vertical storage of mop handles and heads should be provided.

Clean utility/preparation room

3.164 This space must be large enough to accommodate the preparation of a sterile trolley by a scrub nurse and assistant, together with sterile trolleys laid for the next case. It is assumed that a nurse preparing a sterile trolley will scrub-up in the space described above and then put on a sterile gown and gloves in the preparation room. The doorway to the theatre should be wide enough to permit the passage of laid trolleys without compromising sterility. Storage in the preparation room requires special consideration. Staff, sometimes under pressure, must be able readily to locate a required item. The layout of storage for sterile instrument trays, supplementary packs and other items such as the warming cabinet, lotions, suturing material and sterile fluids should be common to all preparation rooms, with, in each room, an area reserved for those items peculiar to the theatre it serves.

Facilities for staff (used exclusively by operating theatres)

Changing rooms

3.165 In these rooms staff change from every day uniform or outdoor clothes into theatre clothing, including appropriate footwear. Staff place their outdoor clothes on secure racks, select theatre clothing of appropriate size from the range presented, change, put their indoor clothes and shoes in a locker, put on theatre footwear and move thence to their place of work. On returning to the changing room, the process is reversed. The arrangements for receiving soiled theatre clothing and footwear must be convenient and orderly.

3.166 Experience has shown that storage and washing of theatre boots requires special consideration. It should be possible to use the facilities in the cleaner's room for washing. Boots, whether clean or dirty, should be stored tidily on a designated and easily accessible boot rack in a space provided with mechanical extract ventilation. Clean boots and dirty boots should be separated. Where wooden clogs are used they may be cleaned in an automated washer/disinfector.

3.167 The inclusion of toilet facilities in the changing room is not acceptable. They should be located in an adjacent space. WC cubicles and shower cubicles should be located near the changing room but must not be within it. Bench seating and mirrors should be provided.

Beverage bay

3.168 A dedicated beverage bay is required for operating theatre staff. For guidance on equipment refer to paragraphs 3.30 and 3.31.

General office

3.169 This office is required for administrative and clerical work in connection with the clinical responsibilities of the staff. In addition it will be used for study, research and discussion.

Switchcupboard

3.170 See paragraph 3.20.

Essential Complementary Accommodation (entire in-patient area)

Overnight stay

3.171 A bed/sitting room is required where staff on duty at night can study, rest and sleep. A member of staff may also use the room during the day as a place to study. This room should have ensuite WC/shower facilities.

3.172 The common room/sleeping accommodation for medical staff on-call must be conveniently accessible to the birthing rooms. It may be necessary to provide overnight stay facilities in the suite itself. Sound attenuation is necessary for the degree of quietness required. The room should have a window, adequate natural ventilation and be furnished in a pleasing manner.

Staff changing

3.173 Near the entrance changing accommodation should be provided for male and female staff, enabling them to change into suitable clothing for working in the in-patient bed area. There should be secure coat-hanging and lockers along with WC, shower, hand washing and grooming facilities.

Milk kitchen/store

3.174 A room is required for the storage and distribution of commercially pre-packed baby milk and disposable utensils. Facilities for the demonstration of the preparation of baby feeds on a domestic scale should be provided. A small refrigerator, a sink with drainer and storage space is required.

Consultant's office

3.175 An office workstation with a desk, seating for up to three other persons, storage for books and files, and a computer terminal, should be provided.

Medical-staff-in-training office

3.176 Refer to paragraph 3.22.

Secretarial office

3.177 Office space for the consultants' secretaries is required. Whether single or multi-person offices are provided is a matter for local decision.

Midwife educationalist's office

3.178 Refer to paragraph 3.23.

Business manager's office

3.179 Refer to paragraph 3.23.

Optional accommodation and services (entire in-patient area)

Relatives'/escorts' overnight room

3.180 A room may be required for relatives and other visitors (although relatives/friends may stay in the LDRP room). Such a room should be suitably furnished for over-night accommodation with en-suite WC, wash-hand basin and shower facilities.

Water birthing room

3.181 Project teams may wish to consider a water birthing facility. This will be an LDRP room modified for the installation of a peninsular birthing pool alongside but separate from the en-suite facility. It is suggested that the en-suite facility is reduced with a shower replacing the bath.

Avoidance of use of flammable anaesthetic agents

3.182 It is envisaged that there will be no normal requirement for the use of flammable anaesthetic agents (eg ether or cyclopropane) in any of the accommodation comprising the birthing facilities and the operating suite of a maternity department. Consequently the Departmental Cost Guides do not include for the features associated with anti-static flooring.

E THE NEONATAL UNIT

The babies

3.183 Babies will be nursed in cots or incubators in a range of areas according to their need for life support systems, intensive care and treatment, monitoring and observation or isolation.

3.184 The design should provide for:

- maximum observation.
- adequate space in all cot areas for staff and parents, sophisticated treatment, life support systems, bulky or fragile equipment, eg portable X-ray machine.
- daylight in all nursery areas.
- one room should be well sound insulated and with facilities for darkening the room for audiological testing and the examination of a baby's eyes and transillumination of the skull, etc.

Parents and visitors

3.185 Parents will be encouraged to visit and stay with, handle and care for their babies, therefore the design should provide:

a. adequate space within the nurseries for parents to sit with and care for their baby, including a room where parents of a seriously ill baby can be together in privacy;

b. sitting space for adults and play space for other siblings;

c. toilet facilities adjacent to the unit;

d. observation of nurseries from the day/sitting/play room;

e. bedrooms nearby for parents living-in;

f. hand washing and coat-hanging etc facilities for visiting parents; this should include a small secure locker;

g. adequate door widths to allow easy access for wheelchairs;

h. a pantry for beverages and snacks;

j. parents' quiet room.

Medical and nursing staff

3.186 Staff require:

a. sufficient space and easy access to all cot areas to observe, care for, examine and treat babies;

adequate space for all the equipment which may be in use;

b. facilities for locating and summoning staff quickly in an emergency;

c. short walking distances between all rooms;

d. sufficient storage for materials and equipment located conveniently near to the point of use;

e. incubators, weighing scales and other pieces of bulky equipment to be held for immediate use in a space which will allow the equipment to be manoeuvred safely;

f. ease of access to medical records and space to write up the records and privacy to discuss them with parents, relatives and staff;

g. privacy to see parents, to give information, teach or counsel them;

h. laboratory facilities;

j. overnight stay for doctors.

Relationship to other hospital services

3.187 The operational policies should incorporate whole hospital policies, eg supply (including sterile supply) and disposal, pharmacy, pathology, domestic cleaning, staff changing, medical records etc.

Reception and waiting

Entrance lobby

3.188 The entrance to the unit should have a controlled access and be visible from staff bases. An area for the reception of mothers, partners and visitors should be conveniently located near the entrance to the unit.

Visitors' room with play area

3.189 This room should be furnished on a purely domestic scale, socket outlets should be provided for a table lamp, television, radio etc; telephone and television jack points should be included too.

Interview/discussion room

3.190 This room is required for discussion and counselling with family members and it is essential that the room is so designed to ensure privacy.

Parents' quiet room

3.191 This room will be used by parents and visitors for relaxation. It should be furnished accordingly.

Toilet and cloakroom facilities

3.192 Adequate facilities should be provided in a convenient location. At least one WC should be assisted.

Consulting, examination and treatment

Nurseries

3.193 Single and multi-cot nurseries will be required. To assist the containment of airborne infection a minimum of two single-cot nurseries should always be provided. The babies' lives will depend on the environmental conditions and life support systems in each nursery and adequate provision of engineering services is essential. Each cot space should have direct access to three oxygen, three medical compressed air, one vacuum suction outlets and 16 electrical socket outlets. The general lighting should have good colour rendering and the intensity should be variable. Each cot space will also require a wall-mounted adjustable examination lamp conveniently available. A clock with a sweep second hand should be clearly visible from within each nursery.

3.194 Not all neonatal units will provide intensive care. Where this is undertaken spaces will need to be organised to allow accommodation, storage and manoeuvre of intensive care equipment such as incubator, ventilator, multiparameter monitor, infusion stands, phototherapy machine, X-ray and ultrasound machines. Parents and staff should not feel cramped, and should be able to wash their hands before handling babies. The same principles should be followed where special care is undertaken although less equipment may need to be accommodated.

3.195 Each individual hospital caring for infants with special care needs or intensive care needs may wish to consider the possibility of creating a discrete transitional care area. This area, which is not given in the schedule of accommodation, is where a mother may care for her infant under the close supervision of midwifery staff or neonatal nursing staff. In general, such a facility would be used for short term care of infants, eg infants of diabetic mothers, other infants with hypoglycaemia, infants with suspected transient tachypnoea of the new-born, infants who are well but nevertheless require nasogastric feeding and all other infants who are anticipated to need short term observation. In such a transitional care area, mother and child room-in together. The nursing complement is less than that which would be available in the Special Care Unit but greater than that routinely available for the

postnatal care of well mothers and infants. Transitional care may be managed in an LDRP room with the appropriate staff input.

3.196 Each nursery will require mechanical ventilation with humidification and controlled air movement. Room temperatures must be capable of independent variation in the range 21°C to 30°C. Windows on external elevations should be designed to avoid condensation and to prevent excessive solar gain. The design of the windows should ensure that cot spaces are not subject to direct sunlight. A hand-wash basin with lever action taps and a mixed outlet is required in each nursery.

Staff base

3.197 Staff bases should be situated to allow adequate observation of babies and of the entrance. The babies' records are held here and X-rays can be viewed. Nurse-to-nurse calls, monitoring display units and all alarms should be centred here. In addition, the computer terminal and associated equipment should be located at the staff base.

Treatment room

3.198 The majority of procedures can be undertaken within the general nursery area. However, a room is required which can be used for procedures and treatment which cannot be undertaken at the cot or incubator side.

3.199 This facility can also be used to store small equipment such as test tubes, syringes, etc required for medical and nursing procedures.

Hearing assessment and vision testing room

3.200 This room is required for audiological testing, examination of a baby's eyes, and transillumination of the skull, etc. The room should be sound insulated. Full blackout facilities are required.

Support spaces

Milk kitchen/store

3.201 A room for the storage of commercially pre-packed baby foods, preparation of special formula baby feeds and the storage of baby bottles, teats, equipment and disposable items should be provided. Some mothers will need to express their milk for their babies on the neonatal unit and there must be facilities in this room for its storage and collection. Refrigeration facilities will be required for special formula baby feeds and human milk feeds.

Beverage bay

3.202 A beverage bay within the area is required, where beverages and cool drinks can be obtained by staff and parents.

Clean utility/preparation room

3.203 A room is required for holding clean and sterile supply items, drugs, medicines and lotions. Within this room, a separate area should also be provided with sink and drainer facilities for cleaning and rinsing small items of equipment.

Laboratory

3.204 A small room should be available where blood gas analysis and other tests which have to be carried out frequently can be performed.

Dirty utility/disposal room

3.205 A disposal area should be provided for soiled linen and waste materials awaiting collection. A small washing machine/dryer should be installed. An adjacent bay or alcove is also required where used bowls and instruments can await return to the Sterilizing and Disinfecting Unit for reprocessing. This area should be near the entrance to the neonatal unit.

3.206 Facilities are also required for cleaning, decontaminating and the maintenance of incubators and other equipment. The location of such facilities will depend upon local hospital operational policies, but they may be in the sterile services department.

Domestic services/Cleaner's room

3.207 A well ventilated secure room is required near the entrance with provision for the storage and daily maintenance of mechanical cleaning equipment and the storage of cleaning materials. Coat hanging and small lockers may be required – see HBN/SHPN 40 – 'Common activity spaces'. This room is for the sole use of the neonatal unit.

Laundry room

3.208 A laundry room is required for washing and drying baby clothes. Equipment should include washing machine, dryer, iron and ironing board. A stainless steel sink and drainer, and a work-top with cupboards should be provided.

Equipment maintenance room

3.209 A room is required for maintaining and storing the spare cots/incubators, infusion stands, dedicated radiology machines and other numerous bulky items of equipment.

Linen store

3.210 A linen room for storage of baby clothes and linen is required.

Switchcupboard

3.211 Refer to paragraph 3.20.

Facilities for staff

Staff changing/WC/shower

3.212 Separate changing accommodation should be provided at the entrance to the suite for male and female staff, to permit them to change into suitable clothing for working in the neonatal unit. Two rooms should be provided with WCs, shower, handwashing and grooming facilities ensuite or adjacent to the cloakrooms. There should be secure coathanging and lockers. (See HBN 41 – 'Accommodation for staff changing and storage of uniforms' for options on local or centralised changing accommodation.)

Office accommodation

Sister's offices

3.213 One office is required for the nurse in charge of the neonatal unit and another for interviewing relatives and staff and preparing reports (see HBN/SHPN 40 – 'Common activity spaces').

Medical staff office

3.214 A duty room/office will be required for the use of medical and nursing staff. This room requires two workstations, computers, telephones, and storage for books, stationery and other office equipment.

General office

3.215 This office is the administrative centre of the neonatal unit. Workstations are required for two or three administrative staff. Medical records will be stored here. The general office should be located adjacent to the reception desk.

Essential Complementary Accommodation

Staff rest room

3.216 Rest room facilities are required where staff can relax and take beverages and snacks. Rest rooms should have windows with a pleasant outlook and be comfortably furnished.

Seminar room

3.217 Staff education and training will take place in the nurseries, and in this room. It may also be used by the clinical teacher from the Education Centre and as a staff room where beverages can be taken.

Parents' overnight room

3.218 At least two domestic type bedrooms (with space for cots), one of which is twin-bedded, should be provided for resident parents. These bedrooms will have ensuite toilet and shower facilities and a nurse call, radio sound, TV outlet and over-bed light.

Staff overnight room

3.219 A bed/sitting room is required where staff on duty at night can study, rest and sleep. A member of staff may also use the room during the day as a place to study. This room should have ensuite WC/shower facilities.

Transport incubator bay

3.220 In a unit providing a paediatric flying squad all the equipment necessary must be readily available to the staff who may travel out, and an area in the unit must be available to store this equipment.

Consultant's office

3.221 Refer to paragraph 3.175.

Medical-staff-in-training office

3.222 Refer to paragraph 3.22.

Secretarial office

3.223 Refer to paragraph 3.177.

Optional Accommodation

Milk bank

3.224 Some units may receive human milk from donors in which case there must be facilities for the reception and storage in domestic freezers. Facilities are needed for pasteurisation of this milk, a process which is increasingly being automated. Facilities are required for milk samples to be taken for laboratory testing, storage of collecting bottles and clerical tasks associated with the receipt of the milk and maintenance of detailed and long term records. Reference should be made to the 'Guidelines for the establishment of human milk banks in the UK' published by the British Paediatric Association.

Breast pump room

3.225 A pleasant room should be provided where a mother can sit in privacy and comfort to express milk for her baby. Space for a crib and facilities for storing a breast pump will be required.

4.0 Environmental and other topics

Introduction

4.1 This Chapter contains guidance concerning aspects of function and design which are common to health buildings generally and which will need to be borne in mind when designing new buildings or upgrading existing premises. Certain aspects which have particular relevance to maternity accommodation are discussed in greater detail.

Economy

4.2 The planning of hospital buildings requires design solutions which not only satisfy functional requirements but also ensure economy in respect of both capital and running costs. Due weight must therefore be given to the questions of space provision, maintenance (including cleaning), energy consumption and staffing requirements. Planning should ensure that spaces are used as intensively as possible and are not unnecessarily replicated.

Statutory and other requirements, including Crown immunities

4.3 The guidance takes account, as far as possible, of all statutory and other requirements in force at the time of publication. However, health authorities and trusts are reminded of their responsibility for ensuring compliance with all relevant statutes, regulations, codes and standards.

4.4 With the general removal of Crown immunity, building and planning law are legally enforceable on the NHS. Guidance on the removal of Crown immunity is given in Circular HN(90)27/LASSL (90)15 (in Wales, WHC(91)4, and in Scotland NHS Circular 1991(GEN)1), in respect of a wide range of legislation.

Building components

4.5 The Building Components Database consists of a series of Health Technical Memoranda (HTMs) 54 – 70 which provide specification and design guidance on building components for health buildings which are not adequately covered by current British Standards. No firms or products are listed. The numbers and titles of the various HTMs in the series are listed in the 'References' section at the end of this Note.

Upgrading or adaptations of existing buildings

4.6 The standards set out in this guidance apply to the provision of accommodation by new building. However, the principles are equally valid and should be applied, so far as is reasonably practicable, when existing accommodation is being upgraded or new accommodation is being constructed within an existing building which may previously have been used for other purposes. Compromises may have to be made between Health Building Note (HBN) and Scottish Hospital Planning Note (SHPN) standards and practicability.

4.7 Before a decision is made to carry out an upgrading project, consideration must be given to the long-term strategy for the service, the space required for the new service, and the size of the existing building. Regard must also be paid to the orientation and aspect of the building, and the extent to which key HBN/SHPN requirements can be met: for example, the need for accommodation with ground level access, and the adequacy and location of all necessary support services.

4.8 If a case for upgrading initially emerges, the functional and physical condition of the existing building should then be thoroughly examined. The check of physical and other aspects of existing buildings should include consideration of:

- overall availability of space for alterations and additions;
- type of construction; including constraints to adaption, for example, load-bearing/non load-bearing structures;
- insulation;
- age of the buildings, condition of fabric, for example external and internal walls, floors, roofs, doors and windows, which may be determined by a condition survey;
- life expectancy and adequacy of engineering services, ease of access and facility for installation of new wiring, pipework and ducts, if required;
- the height of ceilings;
- changes of floor levels;
- fire precautions.

4.9 When comparing the cost of upgrading or adapting an existing building to that of a new building, due allowance, in addition to the building cost, must be made for the cost of relocating people, demolition, salvage costs, disruption of services in a phased project, and the temporary effects on running costs of any impaired functioning of areas affected by upgrading.

4.10 The cost of upgrading work should conform to the guidelines originally promulgated in the Department's WKO letter (81)4 (in Wales, AWO(81)8, and in Scotland, SHHD/DS(82)19), but more recently referred to in Volume 4 of Quarterly Briefing. The guidelines take into consideration the estimated life of the existing building and the difference in cost between upgrading a building and new building.

Information management and technology

4.11 Information management and technology (IM&T) is fundamental to the successful operation of a maternity department. The system selected should offer a wide range of facilities, and be consistent with local and NHS IM&T strategies which may be obtained from the Publishing Department, DH Distribution Centre, PO Box 410, Wetherby, LS23 7LN (tel: 01937 840250/2). A national overview of the trend towards networking and data communication networking systems is contained in 'A Strategy for NHS-wide networking' which may be obtained from the NHS Executive. More detailed guidance on local area networks (LANs) is contained in the NHS IT Standards Handbook Volume 2 which may also be obtained from the NHS Executive.

4.12 Project teams should consider the requirement for provision of radio communications between ambulance services and the maternity department. Consideration should also be given to fax machine communication between maternity departments and GP surgeries and between maternity and other hospital departments, other hospitals and local healthcare facilities.

4.13 Developments in telemedicine may require transmission of video/ECG/X-ray/scanner images between maternity departments and centres of specialist expertise in other hospitals.

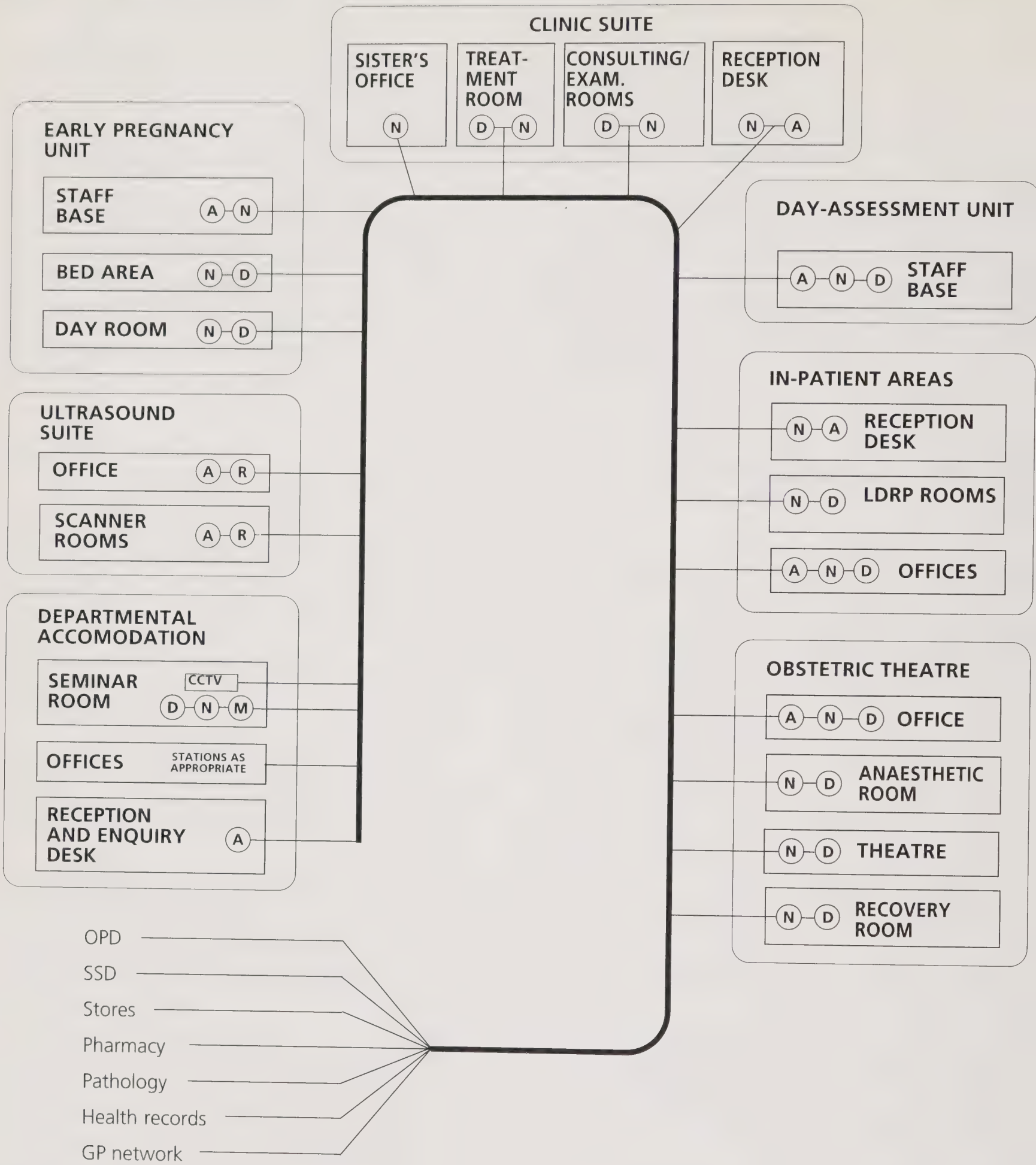
4.14 Figure 3 illustrates a comprehensive IM&T network for a maternity department. A glossary which explains the meaning of the terms used on the figure is included as Appendix 3. However, choice of systems and matters such as the location of computer terminals, the functions to include on the system, and access levels to information, should be determined locally. Examples of data handling needs to be met by installation of a network such as that shown on Figure 3 include:

- within the department:
  - (i) maintaining the appointment system;
  - (ii) operating a patient management system;
  - (iii) managing theatre sessions and lists;
- with other hospital departments:
  - (i) making appointments with, say, the X-ray department;
  - (ii) interchange of information between the maternity department computer system and:
    - the laboratories computer systems;
    - the radiology department computer system;
    - medical records department (Patient Admin System);
- with women:
  - (i) confirming appointments;
  - (ii) receiving telemetric data;
- with GP, advising of attendance and progress of pregnancy;
- with community midwife.

4.15 Project teams should:

- consider the IM&T needs of the department at an early stage;
- review current IM&T developments;
- check that proposals conform with local IM&T policies;
- ensure that sufficient space is provided at the design stage to meet the anticipated need for special power supplies, modems, visual display terminals (VDTs), printers and associated software, stationery, and conduits for cables;
- where necessary and if a suitable space is not available elsewhere, ensure that a room is provided within the department to accommodate the IM&T equipment. The space requirements, temperature limits, etc, should be obtained from the equipment manufacturer;
- ensure that VDT screens are sited so that the displayed text is not visible to members of the public (although it may be considered an advantage to be able to turn the screen to enable the patient to check the accuracy of the information entered);
- ensure that the contents of the VDT screen are legible (see paragraph 5.62);
- ensure that equipment noise is controlled within acceptable limits and, where necessary, fit acoustic hoods or locate the equipment in a separate room;
- ensure that adequate provision is made for the security of data and devices.

Figure 3 IT network diagram



Key to IT station functions

(D) octor

- Orders
- Results
- Clinical coding
- Word processing
- GP contacts
- Waiting lists
- Appointments
- Health records

(N) urse

- Patient assessment
- Care planning
- Staff rosters
- Orders
- Results
- Community contact
- Appointments
- Health records

(M) anager

- Stats activity analysis
- Decision support
- Contracting
- Word processing
- Electronic mail
- Non-clinical orders

(A) dministration

- Appointments
- Health records
- Non-clinical orders
- Electronic mail
- Waiting lists

(S) tock

- Stores
- SSD
- Pharmacy

(R) adiographer

- Orders
- Appointments
- Results
- Health records

IT network diagram
Consistent with National NHS Information Management and Technology Strategy

Security

4.16 Assaults on hospital staff and theft of NHS property are recognised problems. The project team should discuss security with the officer in charge of the local Police Crime Prevention Department and the Trust's security officer or adviser at an early stage in the design of the building. Fire and Security Officers should be consulted concurrently because the demands of security and fire safety may sometimes conflict. Project teams should refer to the NHS Security Manual.

4.17 Security needs to be considered from both the point of view of security from outside intruders and the safety and security of patients and staff. The building should be designed, fitted and equipped to a standard which reduces the risk of injury to users. The creation of a homely, domestic environment will be of equal importance.

Protection from intruders

4.18 In maternity units, there is the possibility of unauthorised removal of infants and of infant abduction. Guidance on dealing with these particular security problems is contained in the Supplement to the NHS Security Manual produced by NAHAT. In its advice on the management and care of babies the Supplement stresses the need for staff and patients to be vigilant. In addition, it advises that facilities should be made available to parents if they need to be away from their baby for any length of time – for example, lockable nurseries or nurseries monitored by a member of staff accountable for this task.

4.19 Throughout the accommodation, except for ground floor windows looking onto courtyards, window openings should be restricted at the bottom to 100 mm for reason of security and to discourage intruders. On the ground floor, which is more vulnerable to intruders, the degree of restriction at the top of the window will be a matter for local decision, bearing in mind that the more a window can be opened the better the natural ventilation. On the first floor, some restriction of top opening is desirable but the amount should be left to local decision. However, in all sanitary and utility areas there should be restrictors to allow opening of windows 100 mm at both the top and bottom. Similarly, casement windows, if used, should be restricted at the side. All restrictors should be tamper-proof.

4.20 Further security guidance for maternity units can be found in the 1995 NAHAT publication 'Safe and Sound: Security in NHS maternity units' and its associated questionnaire framework document 'Safe and Sound: A questioning framework for risk assessment in NHS maternity units'.

Valuables

4.21 Facilities should be provided for the temporary security of mothers' valuables in a staff office. Valuables requiring longer-term storage should be kept in accordance with the whole hospital policy.

Drugs

4.22 Secure storage for controlled drugs will be required. Because of their potential for abuse, normal control procedures over all drugs may need to be strengthened. Refer also to paragraph 5.66.

Damage in health buildings

4.23 When designing and equipping health buildings, the likely occurrence and effects of accidental damage should be considered. Damage in health buildings has increased over the years, to some extent as a result of lightweight, often less robust, building materials. Measures to minimise damage should be taken in the form of protective corners, buffers and plates where necessary, and to proper continuation of floor surfacing, ie strong screeds and fully bonded floor coverings. Protective devices, if used, should be capable of being renewed as need arises.

Catering

4.24 It is assumed that women who are not in the process of labour and delivery or undergoing induction will receive plated meals delivered from the central hospital kitchen. Washing up of utensils will be done centrally.

4.25 Pantry/beverage points are required within the birthing suite for the preparation of beverages and snacks for women in labour, undergoing induction or when feeding their babies at night, as well as for staff and for partners. The size and design of these points should allow for the preparation of beverages, ample storage for dry goods, crockery and cutlery and space for a small refrigerator, freezer and microwave. Facilities for localised dishwashing and handwashing will also be required.

4.26 A beverage bay is required in the neonatal suite for the preparation of beverages for staff and parents. Meals for babies may be prepared in the milk kitchen store.

Maintenance and cleaning

4.27 Materials and finishes should be selected to minimise maintenance and be compatible with their intended function. Building elements that require frequent

redecoration or are difficult to service or clean should be avoided. Special design consideration should be given to entrances, corners, partitions, counters and other elements which may be subjected to heavy use. Wall coverings should be chosen with cleaning in mind. Guidance on those aspects is given in HTMs 56 – 'Partitions', 58 – 'Internal doorsets', and 61 – 'Flooring'.

Education and training

4.28 The re-structuring of nursing and midwifery education proposes that the education of both student nurses and midwives will be based in universities and higher education centres. No longer is there a need for a dedicated nursing and midwifery college within an individual unit or department. It is perceived that in the future a designated education centre with conference facilities for multi-disciplinary use should be provided in a general hospital. The concept of multi-disciplinary education is being encouraged, with medical students and students of nursing and midwifery being educated together.

4.29 Nonetheless, as both medical and nursery midwifery education are largely clinically based, teaching, whether multi or uni-disciplinary, will require to take place within the maternity department. To this end, adequate seminar room space will be required.

Courtyards

4.30 Well proportioned courtyards enable more rooms to receive natural daylight and ventilation. They can also provide a stimulating outlook from bedrooms, dayrooms and staff areas, to compensate for the lack of a longer view. Suitable layout and planting can help to preserve privacy in surrounding rooms.

4.31 It is desirable to provide access to courtyards wherever possible and thresholds should be designed to facilitate access. Seating should be provided. Access for maintenance and cleaning should be from a hospital street or other corridor so that women and staff are not disturbed. Adequate water points, power points and lighting, if necessary, should be provided in all courtyards. Reference should be made to SHPN/HBN 45 – 'External works for health buildings'.

Environmental considerations

4.32 The impact of any new procurement on the environment is of significant importance and is an integral part of NHS responsibility for the health and well-being of the community. Care must be taken to contain the environmental impact of activities to a practical minimum consistent with maintaining responsibilities for providing high-quality patient care. Commitment to the requirements of the Environmental Protection Act 1990 and all other relevant statutory legislation is essential. It is particularly important to:

- continue to promote the efficient use of energy in an economical and environmentally sound manner by promoting energy conservation and, where economically viable, investing in energy-saving technology and management;
- provide environmental training to appropriate staff, and ensure that all staff are aware of environmental policy and how they can contribute to the overall environmental performance;
- promote waste minimisation and reduce the environmental impact of waste through beneficial use, where practical, or safe disposal where not;
- reduce pollution to air, land and water (where practicable).

4.33 Designers should create an environment that will help women and their partners feel at ease, be conducive to efficient working, and contribute to staff morale. Particular note should be taken of 'Health Buildings in the Community' by NHS Estates, but reference should also be made to 'Better by Design' and 'Environments for quality care' also by NHS Estates, and 'Demonstrably Different' and 'First impressions, lasting quality', by the Department of Health.

4.34 External landscaping is often of special value. The design process should also include the choice of well-designed furniture and fittings and co-ordination of carpets and colour.

Internal environmental conditions

Noise and sound attenuation

4.35 In order for the environment to be relaxing and non-institutional in character, the building will have to cater for both noisy and quiet activities and this should be borne in mind during the early stages of planning. It is important that quiet areas are not adjacent to noisy areas. Utility rooms and pantries likely to be used at night should not be too close to bedrooms.

4.36 In addition to appropriate planning measures, noise can be lessened by isolating sound sources with sound containing partitions and doors, by attenuating sound with acoustic materials and generally using soft floor coverings, curtains and other such materials. There will be a need to ensure oral privacy, ie that confidential conversation is unintelligible in adjoining rooms or spaces. This will be typically required in consulting/examination

rooms and interview/discussion rooms. Sound insulation is particularly important in birthing rooms, and where hearing tests on new-born babies are carried out.

Flooring

4.37 It is important to select a floor covering which contributes towards the creation of an attractive environment, but one which does not present a hazard to disabled people or the movement of wheeled equipment. It is important that whatever floor covering is chosen it can be effectively cleaned, maintained and repaired. Rapid developments in soft floor covering technology have produced a wide variety of new materials. (See HTM 61 – 'Flooring'.) Floors should not present or appear to present a slip hazard and the patterning should not induce disorientation. Changes of floor level should be avoided wherever possible. Surface drag, static electricity, flammability and infection hazards are other factors which need to be considered – see also 'Maintenance and cleaning' – paragraph 4.27.

Main entrance

4.38 The first impression gained on entering a maternity department is of fundamental importance. The design and furnishings of entrance, reception and waiting spaces should be warm and welcoming with a carefully chosen decor, soft floor coverings, pictures and plants. This feeling of warmth and welcome should be continued throughout the accommodation.

Shape of rooms

4.39 The shape and appearance of rooms have effects on people. Rooms which are square or nearly square are preferable for most purposes. Long, narrow tunnel-like rooms, L-shaped rooms and rooms which are small, internal, badly lit or poorly ventilated should be avoided.

Doors

4.40 Doors should be wide enough to allow easy passage. Lever handles should be 900 mm above the floor level. Rails across the sight-line of seated people should be avoided in the design of glazed doors. If magnetic door closers are required to meet fire regulations, they should be carefully selected to minimise interference with day-to-day activities. Any locked fire exit doors must have the capability of release on the activation of the fire alarm, or a local release facility of a type not likely to tempt women to misuse it.

4.41 Lockable internal doors used by women should have an external release. In bedrooms, some doors may need two leaves. In an emergency it must be possible to enter WCs from the outside. Doors should be fitted with easygrip bolt handles. Bi-fold doors are not suitable.

Windows

4.42 In addition to the various statutory requirements, the following aspects require consideration: illumination and ventilation; insulation against noise; user comfort; energy conservation; the prevention of glare; the provision of a visual link with the outside world. Windows should have a pleasant outlook if possible.

4.43 In sitting rooms and bedrooms, sill heights should be not greater than 800 mm to enable mothers to look outside when seated: floor to ceiling glazing is inappropriate. Consideration should also be given to strengthened glazing. Where windows are located in the wall behind the bed-heads it is necessary to ensure that the space requirements for beds, lockers, bed-head services etc are not compromised to the disadvantage of either mothers or staff.

4.44 Design should ensure that it is possible for cleaners to have easy access to the inside and outside of windows. Guidance on types of windows and on the safety aspects is available in HTM 55 – 'Windows'.

Ventilation

4.45 Natural ventilation is preferred unless there are internal spaces or clinical reasons that call for mechanical ventilation or comfort-cooling systems.

4.46 Natural ventilation is usually caused by the effect of wind pressure. It will also occur to some extent if there is a temperature difference between inside and outside the building. This thermo-convective effect frequently predominates when the wind speed is low and will be enhanced if there is a difference in height between inlet and outlet openings. Ventilation induced by wind pressure can promote high air change rates through a building if air is able to move freely within the space from windward to the leeward side of the building. Internal partitions, fire compartment walls and closed doorways can, however, often impede the flow path and when this happens the process will be more dependent on single-sided ventilation. Nevertheless, even with this degree of obstruction to air movement, acceptable ventilation may still be obtained without excessive window openings which could prejudice safety, security and comfort. Some types of windows, eg vertical sliding, can enhance single-sided air exchange by temperature difference and these will improve the overall rate of natural ventilation in protected or sheltered areas where the effect of wind pressure is likely to be minimal. Section 2.3 of HTM 55 and BS5925 provide further guidance on this subject.

4.47 Mechanical ventilation and comfort-cooling systems are expensive in terms of capital and running costs; planning solutions should be sought which take maximum advantage of natural ventilation. Mechanical ventilation costs can be minimised by ensuring that, wherever practicable, core areas are reserved for rooms whose function requires mechanical ventilation irrespective of whether their location is internal or peripheral (for example, sanitary facilities and dirty utility rooms).

Furnishings and finishes

4.48 Furnishings and finishes should be domestic in appearance but hardwearing. The problems of maintenance, cleaning and flammability should be borne in mind. (Flammability standards are set out in the Health Services Supply Purchasing Guide Vocabulary Section T).

Art in hospitals

4.49 Works of art and craft can make a significant contribution towards the desired standard of the interior of hospital departments. This need not be limited to the conventional hanging of pictures on a wall. Every opportunity should be taken to include works by artists and craftspeople. These may include paintings, murals, prints, photographs, sculptures, decorative tiles, ceramics and textile hangings.

4.50 Often it is works of art and craft which lend special identity and which help give a sense of locality.

4.51 Advice should be sought from experts on:

a. obtaining funding;

b. ensuring quality in all art and craft works;

c. appropriately locating art and craft works;

d. selecting artists and craftspeople.

4.52 Colour can be used to good effect for decorative and other purposes. Colour schemes can be devised to aid in the identification of particular rooms or parts of the department. Drab colours should be avoided.

Natural and artificial lighting

4.53 Sunlight enhances colour and shape, and helps to make a room bright and cheerful. The harmful effects of solar glare can be dealt with by architectural detailing of window shape and depth of reveals, as well as by installing external and internal blinds and curtains.

4.54 Wherever possible, spaces to be occupied by mothers, families or staff should have natural daylight with an outside view. Natural lighting is important to the well-being of mothers. (However, the need for privacy should also be taken into account.)

4.55 Artificial lighting, as well as providing levels of illumination to suit activities, can make an important contribution to interior design. Designers should develop a lighting scheme that will help to promote a high quality image of the services being offered and a non-clinical, soft environment in as many spaces as possible. Levels of artificial light can also easily be varied by the use of dimmer switches.

4.56 Artificial lighting provided in spaces occupied by mothers should enable any changes to skin tone and colour to be clearly defined and easily identified.

4.57 Fixed luminaires should not be sited immediately above positions where mothers lie on a bed, couch or a trolley. This applies to all spaces where women are consulted, examined and treated.

Disabled people

4.58 It is essential to ensure that suitable access and facilities are provided for people who have problems of mobility or orientation or other special needs. This category includes, besides people who are wheelchair-bound, those who for any reason have difficulty in walking, those with a sensory handicap such as visual or hearing impairment, and those whose first language is not English. Project teams are reminded of the need to comply with the provisions of:

a. The Chronically Sick and Disabled Persons Act 1970 and The Chronically Sick and Disabled Persons (Scotland) Act 1972;

b. The Chronically Sick and Disabled Persons (Amendment) Act 1976;

c. The Disabled Persons Act 1981;

d. The Disabled Persons (Services, Consultation and Representation) Act 1986;

e. Department of the Environment Approved Document M (1992) to The Building Regulations 1991;

f. The Disability Discrimination Act 1995.

4.59 Attention is drawn to BS5810: 1979 'Code of Practice for Access for the Disabled to Buildings' (under review). One of the effects of the 1981 Act is to apply this British Standard to premises covered by the 1970 Act, which includes those open to the public. Practical guidance for complying with The Building Regulations is issued by the Department of the Environment under Approved Document M: 'Access and facilities for disabled people'. (For Scotland, attention is also drawn to recent

amendments to Part T of the Technical Standards for compliance with the Building Standards (Scotland) Regulations 1990, which extend the specific requirements for access and facilities for disabled people – which previously applied only to the ground floor – to the upper floors of all buildings except dwellings.)

4.60 Project teams should refer to HBN/SHPN 40 – 'Common activity spaces', a set of four volumes which includes guidance and Ergonomic Data Sheets on access, space and equipment relating to disabled users of health buildings.

4.61 One LDRP room is specifically designed to cope with the needs of women and their partners who may be disabled.

4.62 It is recommended that project teams consult local representatives of disabled people, or the Centre for Accessible Environments, with regard to the planning of spaces.

4.63 In locations where public telephones are provided, one should be mounted at a height suitable for use by a person in a wheelchair and the handset fitted with an inductive coupler to assist any person using a hearing aid. See also HBN 48 – 'Telephone services'.

Signposting

4.64 Particular attention should be paid to signposting. The form of signposting used and the method of displaying notices should not detract from the desired environment but should be sufficiently explicit to be understood by mothers and escorts who may be either confused or are from a different culture. Only certain doors require conventional labelling, eg fire exit doors, bathrooms, WCs and offices. Project teams should refer to HBN/SHPN 40 – 'Common activity spaces' and HTM 65 – 'Health signs'.

Internal rooms

4.65 Internal rooms may contribute to economy in planning. If, however, additional artificial lighting and ventilation are required, both capital and running costs are likely to be increased.

4.66 Use of internal rooms should be limited to activities which:

a. need a controlled environment; or

b. are carried out intermittently by different individuals – for example, circulation areas and some storage areas.

4.67 Rooms that are likely to be occupied for any length of time by mothers, escorts or members of staff should have natural light.

Privacy

4.68 The design of the accommodation must always preserve the privacy and dignity of mothers. This must be reconciled with the need for unobtrusive observation which is vital for nursing care.

Waste disposal

4.69 The segregation, storage and the safe disposal of waste should comply with the guidance given in the Health and Safety Commission – Health Service Advisory Committee 'Safe disposal of clinical waste', HMSO 1992.

4.70 The waste disposal provision of used items should be consistent with the current policy of the health body for the disposal of clinical waste. A room for the temporary holding of waste should be provided at the entrance to the department.

Smoking

4.71 NHSME circular HSG (92)41, entitled 'Towards smoke-free NHS premises', promulgated Government policy as set out in the 'Health of the Nation' White Paper, and required NHS authorities and provider units to implement policies so that the NHS became virtually smoke-free by 31st May 1993. The circular advised that a limited number of separate smoking rooms should be provided, where necessary, for staff and for patients who cannot stop smoking. In addition, Scottish NHSME circular MEL(92)24 referred to further separate guidance recommending that consideration be given on how to adequately ventilate such smoking rooms.

4.72 No provision has been made in this Note for staff or patients who wish to smoke.

5.0 Engineering requirements

Introduction

5.1 This chapter describes the engineering services contained within a maternity department and how they integrate with the engineering systems serving the whole site. The guidance should acquaint the engineering members of the multi-disciplinary design team with the criteria and material specification needed to meet the functional requirements.

Model specifications

5.2 The National Health Service Model Engineering Specifications, including the Scotland and Northern Ireland supplements, are sufficiently flexible to reflect local needs. The cost allowance is based on the quality of material and workmanship described in the relevant parts of the specifications.

Economy

5.3 Engineering services are a significant proportion of the capital cost and remain a continuing charge on revenue budgets. The project design engineer should therefore ensure:

- economy in initial provision, consistent with meeting functional requirements and maintaining clinical standards;
- optimum benefit from the total financial resources these services are likely to absorb during their lifetime.

5.4 Where various design solutions are available, the consequential capital and running costs should be compared using the discounting techniques described in the Capital Investment Manual. In Scotland, reference should be made to the Scottish Capital Investment Manual.

5.5 The economic appraisal of various locations and design solutions should include the heat conversion and distribution losses to the point of use. Where buildings are located remote from the development's load centre, these losses can be significant.

5.6 The energy management and accounting system should be part of the hospital building management system (BMS) and this should also include metering of all services where practical. If a hospital BMS is not available, the energy management and accounting system for this department should stand alone. It should also be suitable for subsequent integration with a future BMS. Further detailed guidance is contained in HTM 2025 – 'Building management systems'.

5.7 In view of the increasing cost of energy, the project team should consider the economic viability of heat recovery and combined heat and power systems (CHP). Further guidance on CHP can be found in 'A strategic guide to combined heat and power'. Designers should ensure that those services which use energy should do so efficiently and are metered where practicable.

Maximum demands

5.8 The estimated maximum demand and storage requirement, where appropriate, for each engineering service, will need to be assessed individually to take account of the size, shape, geographical location, operational policies and intensity of use of the department.

5.9 NHS Estates may provide estimates of the maximum demand and storage requirements for a specific project if required by the project team.

Activity Data

5.10 Environmental and engineering technical data and equipment details are described in the Activity Data Sheets which are listed in Chapter 7. They should be referred to for space temperatures, lighting levels, outlets for power, telephones, equipment details, etc.

Safety

5.11 The Health and Safety at Work etc Act 1974, as partly amended by the Consumer Protection Act 1987, together with the Workplace Regulations, the Work Equipment Regulations, and the Construction (Design and Management) Regulations 1994, impose statutory duties on employers and designers to minimise – so far as is reasonably practicable – any risks arising from the use, cleaning or maintenance of engineering systems. One of the requirements of this legislation is to ensure, so far as is reasonably practicable, that design and construction is such that articles and equipment will be safe and without risks to health at all times when being set, used, cleaned or maintained by a person at work.

Figure 1 Concealed services – LDRP room, Kingston Hospital NHS Trust, Kingston-upon-Thames

Figure 2 Concealed services – wall-hung rescuscitaire, LDRP room women's hospital, San Diego, California

Figure 3 LDRP room and equipment area, Kingston Hospital NHS Trust, Kingston-upon-Thames

Figure 4 Sitting room, Kingston Hospital NHS Trust, Kingston-upon-Thames

Figure 5 Patients' room with nappy changing table – neonatal unit, Nottingham City Hospital

Figure 6 Unit housing computers, surgical suplies, waste bin

Figure 7 Wall-mounted rescuscitaire

Figure 8 En-suite shower room

Figure 9 En-suite facilities for person in a wheelchair

Figure 10 Neonatal intensive care area, Nottingham City Hospital

Figure 11 Neonatal special care area, Nottingham City Hospital

Figure 12 Neonatal unit reception area, Nottingham City Hospital

Fire safety

5.12 The project team should familiarise themselves with Firecode which contains the Department's policy and technical guidance on fire safety in hospitals and other NHS premises. In addition, the Fire Practice Note series provides guidance on specialist aspects of fire precautions. In Scotland, refer to 'Firecode in Scotland'.

5.13 Each single-bed room and multi-bed room should be capable of being fully enclosed for the containment of smoke.

Noise

5.14 Excessive noise and vibration from engineering services, whether generated internally or externally and transmitted to individual areas, or noise from other sources, for example, speech which can be transmitted by the ventilation system, can adversely affect the operational efficiency of the department and cause discomfort to patients and staff. The limits and means of control advocated in HTM 2045 – 'Acoustics' should provide an acceptable acoustic environment.

5.15 In addition to designing for control of noise levels, there may also be a need to ensure speech privacy, so that confidential conversations are unintelligible in adjoining rooms or spaces. This will be important in consulting/examination rooms, particularly where these are located adjacent to waiting areas.

Space for plant and services

5.16 Space for plant and services should provide:

- easy and safe means of access, protected as far as possible from unauthorised entry;
- for frequent inspection and maintenance. Sufficient access panels should be provided for this purpose;
- for eventual removal and replacement of plant.

5.17 Recommended spatial requirements for mechanical, electrical and public health engineering services are contained in HTM 2023 – 'Accommodation for plant and services'. Reference is also made in HTM 2023 to the Construction (Design and Management) Regulations.

5.18 The distribution of mechanical and electrical services to final points of use should, wherever possible, be concealed in walls and above ceilings. Heat emitters should be contained within a 200 mm wide perimeter zone under window sills and critical dimensions should be taken from the boundary of this zone.

5.19 The 200 mm zone includes the floor area occupied by minor vertical engineering ducts and is included in the building circulation allowance.

5.20 Services contained in the space above the false ceiling, with the exception of drainage, should be confined to those required for the department.

5.21 Access to control and isolation devices. Devices for control and safe isolation of engineering services should be:

- located in circulation rather than working areas;
- protected against unauthorised operation;
- clearly visible and accessible, where intended for operation by the department's staff.

Engineering commissioning

5.22 The engineering services should be commissioned in accordance with the validation and verification methods identified in the latest HTMs. Engineering services for which a specific HTM is not currently available should be commissioned in accordance with 'Engineering commissioning' published by the Institute of Healthcare Engineering and Estate Management. Flow measurement and proportional balancing of air and water systems require adequate test facilities to be incorporated at the design stage. Guidance is also contained in a series of commissioning codes published by the Chartered Institute of Building Services Engineers. In Scotland, the building and its engineering component should be commissioned in accordance with Scottish Hospital Technical Note 1: Post Commissioning Documentation for Health Buildings in Scotland.

MECHANICAL SERVICES

Heating

5.23 Spaces heated by low pressure hot water systems should use radiators of the low surface temperature type. Surface temperatures should not exceed 43°C. Exposed hot water pipe work, accessible to touch, should be insulated. Further guidance is contained in Health Guidance Note – '"Safe" hot water and surface temperatures'.

5.24 Radiators should normally be located under windows or against exposed walls with sufficient clear space between the top of the radiator and the window sill to prevent curtains reducing the output. There should be adequate space underneath to allow cleaning machinery to be used. Where a radiator is located on an external

wall, back insulation should be provided to reduce the rate of heat transmission through the building fabric.

5.25 It is recommended that radiators should be fitted with thermostatic radiator valves. These should be of robust construction and selected to match the temperature and pressure characteristics of the heating system. The thermostatic head, incorporating a tamper-proof facility for pre-setting the maximum room temperature, should be controlled via a sensor located integrally or remotely as appropriate. To provide frost protection at its minimum setting, the valve should not remain closed below a fixed temperature.

5.26 Radiators may also be used to offset building fabric heat loss in mechanically ventilated spaces.

5.27 Flow temperatures to heating appliances should be controlled by the BMS in accordance with space requirements and external temperatures. The system should be zoned to suit the building.

Ventilation (general)

5.28 Air movement induced by mechanical ventilation should be from clean to dirty areas, where these can be defined. The design should allow for adequate flow of air into any space having only mechanical extract ventilation, via transfer grilles in doors or walls. Such arrangements, however, should avoid the introduction of untempered air and should not prejudice the requirements of fire safety or privacy.

5.29 Mechanical ventilation should ensure that both supply and extract systems are in balance, and take account of infiltration as appropriate.

5.30 Fresh air should be introduced via a low velocity system and should be tempered and filtered before being distributed via high level outlets. Diffusers and grilles should be located to achieve uniform air distribution within the space, without causing discomfort to patients.

5.31 The supply plant for ancillary accommodation should be separate from plant serving the operating theatre.

5.32 A separate extract system will be required for "dirty" areas, for example, toilet facilities. It should operate continuously throughout the day and night. A dual motor fan unit with an automatic changeover facility should be provided.

5.33 External discharge arrangements for extract systems should be protected against back pressure from adverse wind effects and should be located to avoid reintroduction of exhausted air into this or adjacent buildings through air intakes and windows.

5.34 Further detailed guidance is contained in the 'Design considerations' volume of HTM 2025 – 'Ventilation in healthcare premises'.

Ventilation of birthing rooms

5.35 Occupational exposure limits for waste anaesthetic gases were introduced on 1 January 1996. This requires a risk assessment to establish the appropriate control measures which are based on a time-weighted average exposure over eight hours.

5.36 General ventilation of the birthing rooms will be the main means for controlling the level of waste anaesthetic gas pollution in these spaces because currently there is no practicable method of directly capturing exhaled nitrous oxide from a mother in labour. The supply air diffuser should be positioned to give a cross-flow and the volume should provide 10 air changes per hour. To optimise the control of waste anaesthetic gas the exhaust may be positioned behind the bed at patient head height, that is 1200 – 1400 mm above the floor.

5.37 Where a birthing pool is provided it is unlikely that nitrous oxide/oxygen mixture will be used. However, ventilation will be essential to control the humidity and the extract rate of 10 air changes per hour described above should be sufficient (this will also control occupational exposure to any nitrous oxide/oxygen mixture if used).

Ventilation of neonatal resuscitation room

5.38 The resuscitation room cooling system should be designed to maintain an internal temperature of 25°C when the external ambient is 28°C. The supply rate should provide 10 air changes per hour and maintain a balanced pressure within the room relative to adjacent spaces. In Scotland, comfort cooling will generally not be required, tempered air with humidification will usually suffice.

Ventilation controls

5.39 Supply and extract ventilation systems should include local controls and indicator lamps to confirm the operational status of each system. Where the system is used on a regular daily pattern, timeswitch control with manual override for a limited period should be considered. The indicators for a system serving a particular space should be in or immediately adjacent to that space. It may be appropriate to locate all indicators at the staff base. Where manual controls are available for staff use, they should be provided with labels which clearly define their function.

Ventilation (substances hazardous to health)

5.40 Local exhaust ventilation will be required where exposure by inhalation of substances hazardous to health cannot be controlled by other means. The Health and Safety Executive in their current publication EH40/95, Occupational Exposure Limits 1995, updated annually, sets limits which form part of the Control of Substances Hazardous to Health Regulations 1994 (COSHH).

Hot and cold water services

5.41 Guidance on the design and installation of hot and cold water supply and distribution systems is contained in HTM 2027 – 'Hot and cold water supply, storage and mains services'. (In Scotland, Scottish Hospital Technical Note 2:' Domestic Hot and Cold Water Systems for Scottish Healthcare Premises', issued with NHS EPM (1995) 7.)

5.42 All cold water pipework, valves and fittings should be economically insulated and vapour sealed to protect against frost, surface condensation and heat gain.

5.43 The domestic hot water supply should be taken from the general hospital calorifier installation at a minimum outflow temperature of 60°C ± 2.5°C and distributed to all outlets such that the return temperature at the calorifier is not less than 50°C. See Health Guidance Note – '"Safe" hot water and surface temperatures'. In Scotland, see Scottish Hospital Technical Note 2: 'Domestic Hot and Cold Water Systems for Scottish Health Care Premises'. The requirements for the control of legionellae bacteria in hot and cold water systems are set out in HTM 2040 – 'The control of legionellae in health care premises – a code of practice'.

Birthing pools

5.44 Where provided, peninsular birthing pools require means to control both the inlet water temperature and the pool temperature to within 3°C of body temperature. The pool drain should ensure efficient emptying of the birthing pool; the hospital system will normally be adequate although the advice of the pool supplier should be sought. Before installing a birthing pool, project teams should check the load-bearing capacity of the birthing room floor.

Piped medical gases and vacuum

5.45 Guidance on piped medical gas systems, anaesthetic gas scavenging and gas storage is contained in HTM 2022 – 'Medical gas pipeline systems'.

Pneumatic tube transport

5.46 Pneumatic tube transport may provide a viable alternative to porters for moving specimens to the pathology department. Factors to be assessed will include:

- distance, time and cost of travel between the two locations;
- time to process specimens in the laboratory;
- proportion of specimens which require urgent results.

5.47 The total capital and revenue cost of each option should be determined in accordance with the principles set out in the Capital Investment Manual (England and Wales) or the Scottish Capital Investment Manual. Further guidance on pneumatic conveyor systems is contained in HTM 2009 – 'Pneumatic air tube transport systems'.

Bedhead services

5.48 It is becoming increasingly popular to provide a more domestic environment in maternity departments. To achieve this, bedhead services can be concealed within a cupboard or behind some other movable feature. In enclosing such services, however, care must be taken to ensure that there would be adequate ventilation in the event of gas leakage.

ELECTRICAL SERVICES

Electrical installation

5.49 The installation should comply in all respects with BS7671 – 'Requirements for Electrical Installations', IEE Wiring Regulations, 16th Edition (and subsequent amendments) and HTM 2007 – 'Electrical services: supply and distribution'.

5.50 The point of entry for the electrical supply should be a switchcupboard housing the main isolators and distribution equipment. This space will also be the distribution centre for subsidiary electrical services. Supplies should be metered and, whenever possible, equipment should be mounted at a height which gives easy access from a standing position. Switchgear should be lockable in the "off" position.

5.51 The electrical installation in occupied areas should be concealed using PVC-insulated cable and screwed steel conduit or trunking. In certain circumstances, however, mineral insulated metal-sheathed or steel wire armour (SWA) cables may be used. External installations should use PVC-insulated cables in galvanised screwed steel conduit with waterproof fittings.

Electrical interference

5.52 Care should be taken to avoid mains-borne interference, electrical radio frequency and telephone interference affecting physiological monitoring equipment, computers and other electronic equipment used here or elsewhere on the site.

5.53 Electrical products, systems and installations should not cause, or be unduly affected by, electromagnetic interference. This requirement is in the form of an EC Directive on Electromagnetic Compatibility (89/336/EEC as amended by 91/263/EEC and 92/31/EEC). This Directive has been implemented in UK law by the Electromagnetic Compatibility Regulations 1992 (SI No 2372).

5.54 Guidance on the avoidance and abatement of electrical interference is contained in HTM 2014 – 'Abatement of electrical interference'.

5.55 Fluorescent luminaires should comply with BS5394.

Lighting

5.56 Colour finishes and lighting throughout the department should be co-ordinated to create a calm and welcoming atmosphere. Practical methods are contained in the CIBSE Lighting Guide LG2 – 'Hospitals and Health Care Buildings'.

5.57 Architects and engineers should collaborate to ensure that decorative finishes are compatible with the colour rendering properties of the lamp and that the spectral distribution of the light sources is not adversely affected.

5.58 Luminaires should be manufactured and tested in accordance with the requirements specified in the relevant sections of BS4533. Their location should afford ready access for lamp changing and maintenance, but with the overriding requirement that the recommended standard of illuminance is provided to the task area in all treatment rooms.

5.59 The number and location of luminaires connected to a circuit and the number of switches and circuits provided should allow flexibility in the general and local level of illumination, particularly in areas away from windows where daylight can vary significantly. Some areas of the department which may be unoccupied for long periods may also be suited to automatic/presence switching.

5.60 Generally, energy-efficient luminaires should be used wherever possible. Intermittently and infrequently used luminaires may be fitted with compact fluorescent or incandescent lamps.

5.61 Mobile examination luminaires, where provided, should operate at extra low voltage (normally fed from an in-built step-down transformer), be totally enclosed and be equipped with a heat filter. The temperature of external surfaces should be such as to avoid injury to patients and staff.

5.62 Where visual display terminals (VDTs) are to be used, the lighting should be designed to avoid bright reflections on the screen and to ensure that the contents of the screen are legible and meet the Health and Safety (Display Screen Equipment) Regulations 1992, which came into force on 1 January 1993. The Regulations implement a European directive, No. 90/270/EEC of 29 May 1990, on minimum safety and health requirements for work and display screen equipment. Further guidance is contained in the CIBSE Lighting Guide LG3.

5.63 The lighting of corridors, stairways and other circulation areas, which generally are areas not covered by Activity Data room data sheets, should be in accordance with the guidance contained in Volume 4 of HBN40 – 'Common activity spaces' (in Scotland see also Volume 5 which is an appendix for use in Scotland).

5.64 Emergency lighting should be provided on primary escape routes in accordance with HTM 2011 – 'Emergency electrical services' and BS5266.

Lighting treatment rooms

5.65 An examination luminaire should be provided over the treatment chair/table. It should be adjustable in pitch and rotation to allow the beam to be directed locally and should provide reasonably shadow-free illumination with neligible heat development to avoid injury to patient and staff. The examination luminaires should be manufactured and tested in accordance with the requirements specified in the relevant sections of BS4533.

Controlled Drugs cupboard

5.66 A red indicating lamp should be provided on each Controlled Drugs cupboard and, where appropriate, outside the doorway to the room in which the cupboard is located and at a continuously staffed location. The lamps should be interlocked with the cupboard and alarm

system to give visual and audible indication at the continuously staffed location of unauthorised entry to the cupboard.

5.67 An indicating lamp denoting that the circuit is energised should also be fitted to each cupboard. The supply circuits for the lamps and alarm system should be derived from essential circuits. The cupboards should comply with BS2881. Further information is contained in HTM 63 – 'Fitted storage systems'. More general information is contained in 'Guidelines for the Safe and Secure Handling of Medicines'.

5.68 Guidance is also contained in the Scottish Home and Health Department publication: 'Guidelines for the Safe and Secure Handling of Medicines'.

Socket-outlets and power connections

5.69 Sufficient 13 amp switched and shuttered socket-outlets, connected to ring or spur circuits, should be provided to supply all portable appliances likely to be used simultaneously. The installation of twin outlets should be considered where activities occur in juxtaposition.

5.70 Switched socket outlets should be provided in corridors and in individual rooms to enable domestic cleaning appliances with flexible leads (9 metres long) to operate over the whole department.

5.71 Appliances requiring a three-phase supply, or those rated in excess of 13 amp single phase, should be permanently connected to separate fused sub-circuits. The sub-circuits should be fed from the distribution board and terminate at a local isolator. Fixed appliances, less than 13 amp rating, should be permanently connected to a double-pole switched 13 amp spur outlet. The spur outlet should contain an indicating light, where appropriate, and a suitable fuse.

5.72 Isolation switches should be provided adjacent to all engineering plant and equipment for use by maintenance staff.

5.73 All socket outlets in consultation/examination/ treatment areas should be connected such that a supply is available from at least two separately fused circuits of the same phase.

5.74 Socket outlets should be connected to essential circuits in accordance with the guidance contained in HTM 2011 – 'Emergency electrical services'.

5.75 Advice on the power supply and requirements for fixed and mobile radiodiagnostic equipment is contained in HTM 2007 – 'Electrical services: supply and distribution'.

5.76 The electrical supply connections to all medical electrical equipment should comply with BSEN 60 601–1–2:1993.

Emergency electrical supplies

5.77 Guidance on emergency electrical supplies is contained in HTM 2011 – 'Emergency electrical services'.

Main entrance security systems

5.78 The main entrance should be controlled by a door security and/or closed-circuit television surveillance system which provides for verbal communication with, and an electro-magnetically operated door lock to be controlled from, the reception desk. Access from the maternity department to the main hospital may require similar facilities. See also paragraphs 4.16 to 4.22.

5.79 Further guidance is contained in Scottish Office PAN 46 Planning for Crime Prevention, and the NAHAT Security Manual together with the supplement published in 1995. Guidance on security systems in maternity units is also available in the NAHAT publication 'Safe and sound' published in 1995.

Personal alarm transmitters

5.80 Local security policies should determine at the planning stage whether or not staff are to be issued with personal alarm transmitters. If personal alarm transmitters are not "self contained" then conduits and accommodation for transmitting/receiving equipment and propagating devices, such as induction loops and/or aerials, will be required to suit the selected system.

Security alarm

5.81 A security alarm actuating switch or button should be located unobtrusively at the reception desk and staff base. It should be connected to a continuously staffed area such as the hospital telephone switchboard on the porters' room.

Staff location system

5.82 The hospital staff location system should be extended to include this department. Further guidance is contained in HTM 2015 – 'Bedhead services'.

Patient/staff and staff/staff call systems

5.83 The patient/staff and staff/staff call systems may be hard–wired or radio systems. In all cases they must be electromagnetically compatible (see also paragraphs 5.52 to 5.55).

5.84 Patient/staff call points should be provided in all spaces where patients may be left alone temporarily, such as consultation/examination/treatment rooms and patient WCs. Each call unit should comprise a push button or pull cord, reassurance lamp and reset unit. The audible alarm signal initiated by patients should operate for one second at 10 second intervals with corresponding lamps lit continuously until cancelled.

5.85 Staff/staff call points should be provided in all spaces where staff consult, examine and treat patients. Call units should generally comprise a switch (pull to call, push to reset) and reassurance lamp. The audible alarm signal initiated by the staff should operate intermittently at half second intervals with corresponding lamps flashing on and off at the same rate.

5.86 A visual and audible indication of operation of each system should be provided at the staff base to give responding staff unambiguous identification of the call source. Further guidance is contained in HTM 2015 – 'Bedhead services'.

Telephones

5.87 Central telephone facilities for internal and external calls will normally be available and should be extended to serve this department. Telephones will normally be of the desk pattern.

5.88 The neo-natal resuscitation room should be provided with splashproof line jack units and wall mounted "hands-free" telephones with volume control. They should be fitted with indicating call lights, bells or buzzers of subdued tone and muting switches.

5.89 Instruments in the recovery room should be fitted with indicating call lights, bells, buzzers of subdued tone and muting switches.

5.90 At least one ex-directory line should connect directly with the local ambulance services control centre. It should have a distinctive bell or buzzer.

5.91 Coin-and/or card-operated payphones and free phone for taxis, depending on local policy, should be provided in the main waiting area.

5.92 Self-contained intercommunication systems are relatively inflexible and limited in the extent of their economic application. Any subsequent modifications to them usually involve disproportionate cost. In only very rare instances can such systems be justified for functional or clinical reasons.

5.93 A properly planned telephone system will provide prompt intercommunication facilities between all extensions. Abbreviated dialling can be used for a range of frequently called extension numbers. Consequently, reasons for providing a separate intercommunication system should be clearly shown.

5.94 Further guidance on telephone systems is contained in HBN 48 – 'Telephone services' and HTM 2055 – 'Telecommunications (telephone exchanges)' (in Scotland, SHPN 48 – 'Telecommunications').

Data links

5.95 Conduits will be required for cables to interconnect electronic equipment. The extent to which these conduits should link all workstations in this department and the main hospital system or elsewhere will depend on the local policy for information management and technology (see paragraph 4.11). If a structured cable system is to be installed within the hospital, then the maternity department should be provided with all outlets wired and connected. Conduits may also be required to link closed-circuit television between the seminar room and treatment areas.

Clocks

5.96 Clocks may be of impulse, synchronous or battery/quartz type, except in the anaesthetic room and in the resuscitation room where they should display "real time", "elapsed time" and have a sweep second hand.

Radio (ambulance services)

5.97 Where, depending on local policy, radio equipment is required for direct communication with ambulance vehicles, conduits and accommodation for transmitting/receiving equipment will be required. See also paragraphs 4.11 to 4.15.

Music and television

5.98 Conduits for television/video and background music system outlets should be provided in the main waiting area.

Lightning protection

5.99 Protection of the building against lightning should be provided in accordance with HTM 2007 and BS6651:1992.

INTERNAL DRAINAGE

General

5.100 The primary objective is to provide an internal drainage system which:

- uses the minimum of pipework;
- remains water- and air-tight at joints and connectors;
- is sufficiently ventilated to retain the integrity of water seals.

Design parameters

5.101 The design should comply with the relevant British Standards and Codes of Practice, including BS5572, and the current building regulations. Recommendations for spatial and access requirements for public health engineering services are contained in HSE Data Sheet EA5.

5.102 The gradient of branch drains should be uniform and adequate to convey the maximum discharge to the stack without blockage. Practical considerations, such as available angles of bends, junctions and their assembly, as well as space considerations, usually limit the minimum gradient to about 1:50 (20 mm/m). For larger pipes, for example 100 mm diameter, the gradient may be less, but this will require workmanship of a high standard if an adequate self-cleaning flow is to be maintained. It is not envisaged that pipes larger than 100 mm diameter will be required within inter floor or ground floor systems serving this department.

5.103 Provision for inspection, rodding and maintenance should ensure "full bore" access and be located to minimise disruption or possible contamination. Manholes should not be located within this department.

6.0 Cost information

Introduction

6.1 For all types of health building, it is important that building costs and revenue expenditure are kept as low as possible and consistent with acceptable standards. In applying the guidance in this document to determine a detailed design, the need for cost effectiveness should always be of prime concern, and the activities should be carefully considered so that, where appropriate, space can be shared for similar activities which are programmed to take place at different times. The solution adopted should neither be detrimental to the proper functioning of the spaces involved nor to the needs of the users. Within this general context, Health Building Notes/Scottish Hospital Planning Notes provide a synopsis of accommodation for health buildings which the Department of Health/Scottish Home and Health recommends for the provision of a given service.

Departmental Cost Allowance Guides

6.2 Departmental Cost Allowance Guides (DCAGs) related to this Note are officially notified in the Quarterly Briefing published by NHS Estates. A full listing of all DCAGs is available via a hard copy listing of DCAG Database, together with guidance notes, which can be obtained from NHS Estates. Further information on this can be obtained from NHS Estates, telephone (0113) 254 7029 or 254 7030. A schedule of Departmental Cost Allowances for use in Scotland is available from the Estates Division, Management Executive NHS.

6.3 The attention of the project team is drawn to guidance given in the Capital Investment Manual (Business Case Guide) (England and Wales; for Scotland, see 'Health Building Procurement in Scotland – Principles of Cost Control'). This publication seeks to reflect the important changes that have taken place over recent years, both with the introduction of the NHS reforms and with the changing patterns of healthcare delivery. This new process is intended to reduce unnecessary and often expensive planning work which may subsequently prove to be abortive, and emphasises the necessity for a sound business case in support of the capital expenditure involved. The Capital Investment Manual states that the Capital Works estimate of an intended scheme must be based on, where applicable, industry norms such as the DCAGs plus a percentage to cover on-costs.

6.4 The DCAGs for this Note reflect the accommodation that the maternity department will require when incorporated into an acute general hospital where the common use of services will be available. Costs are based on the typical two-storey new-build, on a greenfield site standing in its own grounds with no planning constraints.

6.6 The DCAGs for this Note also cover the building and engineering requirements. Costs for external works, external engineering services and abnormals are not included in the DCAGs. The abnormals will largely be determined by the characteristics of the site, such as an inner-city location, or the condition and type of the existing building if refurbishment is the only option. The project team's attention is also drawn to the fact that should the preferred option be to provide a stand-alone maternity unit then additional facilities to those described in this Note may be necessary.

6.7 It is also important that project teams assess at the earliest opportunity all the likely on-cost implications of individual sites and schemes.

6.8 DCAGs are exclusive of VAT, Professional Fees, Building and Planning Fees and all Local Authority charges, and are based on a Locational Factor of 1.

Locational Factors

6.9 Locational factor adjustments may be applied to the Works Costs (ie, the total of the DCAGs plus the requisite on-costs) to take into account the local market conditions. For further information regarding these, please refer to the Regional Location factors in the Quarterly Briefing published by NHS Estates.

Functional units

6.10 The following functional units have been selected for costing to provide a firm but flexible menu from which Maternity Departments of differing sizes may be derived:

Entrance

Antenatal/postnatal clinic suite – eight consulting/examination rooms

Ultrasound suite – two scanning rooms

Day assessment facilities – 2,500 births per annum

Early pregnancy unit – one day unit

Birthing facilities including in-patient bed area and operating theatre suite – 2,500 births per annum

Neonatal unit – six, eight, ten, 12 and 20 cots

Schedules of activity spaces and areas used for costing for each functional unit are provided at the end of this Chapter.

Antenatal/postnatal clinic suite

6.11 A suite has been costed based on eight consulting/examination rooms, together with reception, waiting, offices, utility, WC and storage facilities adequate for this suite.

Ultrasound suite

6.12 The ultrasound suite has been costed taking into account two scanning rooms together with the appropriate clinical treatment areas, staff facilities and storage areas.

Day assessment unit

6.13 The day assessment unit provides a range of treatment and monitoring areas for patients not requiring in-patient care. The size of the unit will depend on the number of deliveries per annum. Four day assessment beds have been costed for a maternity department of 2,500 births per annum.

Early pregnancy unit

6.14 This unit has been costed on the basis that it contains one four-bed multi-bed room together with the appropriate clinical facilities. This unit is a day unit, not an in-patient ward.

Birthing facilities including in-patient bed area and operating theatre suite

6.15 The costed birthing suite has the capacity to cater for 2,500 births per year and comprises 19 birthing rooms, 19 other beds; a choice of two options is given within the attached schedule, together with the appropriate patient/visitor facilities, clinical/treatment areas, utilities, staff facilities and storage.

6.16 The operating theatre suite is also incorporated into this unit and comprises two operating theatres, a recovery room with space for four beds, and associated clinical and staff facilities.

Neonatal unit

6.17 Six-, eight-, ten-, 12- and 20-cot sizes of unit have been costed allowing the project team to choose a unit appropriate for its particular needs. Each size of unit has accommodation for infant care with sanitary, utility and storage areas, together with staff and visitors' facilities.

6.18 A 20-cot unit will have neonatal intensive care functions. Each unit should always contain accommodation for mothers and siblings to stay overnight, in or close to the unit.

Essential complementary accommodation (ECA)

6.19 Essential complementary accommodation (ECA) comprises activity spaces which are essential to the running of a maternity department, but which in certain circumstances may be available in a convenient location elsewhere in the centre. The ECA spaces costed in this Note are listed in the schedules of accommodation at the end of this chapter.

Optional accommodation and services (OAS)

6.20 This Note draws attention to areas of accommodation considered to be project options for providing services or facilities, including the likely cost implications. This information will enable the project team to select the most appropriate design solution. Additionally, items comprising a single functional unit for the various departments have been incorporated to allow flexibility with regard to costings. The optional accommodation and services (OAS) spaces costed in this Note are listed in the schedules of accommodation at the end of this chapter.

Dimensions and areas

6.21 In determining spatial requirements, the essential factor is not the total area provided but the critical dimensions – that is, those dimensions critical to the efficient functioning of the activities that are to be carried out. To assist project teams in preparing detailed design solutions for the rooms and spaces, studies have been carried out to establish dimensional requirements in the form of critical dimensions. The results of these studies appear as ergonomic diagrams in HBN/SHPN 40 – 'Common activity spaces'.

6.22 For development planning, and at the earliest stage of a design, it may be convenient for designers to have

data available which will enable them to make an approximate assessment of the sizes involved. For this reason, the areas prepared for the purpose of establishing the cost allowances are included at the end of this chapter.

6.23 It is emphasised that the areas published do not represent recommended sizes, nor are they to be regarded in any way as specific individual entitlements.

6.24 Another important factor affecting the area requirement is the timetabling of those services offered by the department. For example, an antenatal/postnatal clinic suite that runs an efficient appointment system tends to require less space for waiting than one which does not.

6.25 In the planning of an efficient design, it may be necessary to consider the variation of areas; for instance, in the refurbishment or conversion of older property:

a. rooms tend to be larger than the recommended area;

b. some rooms may be too small or in the wrong location for efficient use;

c. circulation space tends to form a larger than normal proportion of the total area.

Circulation

6.26 Space for circulation, as well as including space for all corridors, also includes a five percent allowance for planning, a three percent addition for an engineering zone adjacent to the external walls, all small vertical ducts and spaces occupied by partitions and walls. These areas are all included, and therefore costed, in the DCAGs. Note that the percentage for circulation is lower than that generally expected. This is because the design of the department is based on the concept of the LDRP room, which by its very nature reduces the need for general circulation space.

6.27 It is also important to remember that the circulation figures included in the DCAGs for this Note are those anticipated for new, purpose-built premises with no constraints. Where constraints are encountered, for example in the refurbishment or conversion of older types of property, this circulation figure would be likely to increase accordingly, and it may therefore be necessary to make some adjustment to the circulation figure.

Communications

6.28 Staircases and lifts are not included in the DCAGs relevant to this unit. Costs related to these elements along with a suitable space standard allowance should be made in the on-costs. For further reference please refer to HBN 40 – 'Circulation areas'.

Land costs

6.29 As is the norm for DCAGs, costs are exclusive of all land costs and associated fees. However, the project team's attention is drawn to the fact that costs associated with these should be included in the Business Case Submission, as detailed in the Capital Investment Manual 'Health Building Procurement in Scotland – Principles of Cost Control' (see paragraph 6.3 above), and could therefore be an important part of the overall cost viability of the scheme.

Engineering services

6.30 The following engineering services, as described in the Engineering Chapter and exemplified in the Activity Data, are included in the cost allowances. Primary engineering services are assumed to be conveniently available at the boundary of the unit.

a. **Mechanical services**

Heating:	low pressure hot water system with thermostatic radiator control, maximum touch temperature 43°C.
Ventilation:	mechanical supply and extract to meet clinical and functional requirements.
Cold water service:	centrally supplied to service points, including drinking water and hose reels. Storage tanks are not included.
Hot water service:	supplied from a central storage system with thermostatic mixing valves at outlets. Storage is not included.
Medical gases:	piped supplies of oxygen, medical vacuum, nitrous oxide, medical air to bed spaces, clinical/treatment areas and operating theatre suite, waste gas scavenging system in the operating suite and birthing rooms.

b. **Electrical services**

Distribution switchboard.

Building management system.

Lighting system: general lighting as required by tasks. Fluorescent, tungsten, safety and emergency luminaires as appropriate. Dimming included for scanning room and birthing room.

Power system: socket outlets and other power outlets for fixed and portable equipment. Supplementary equipotential earth bonding. Standby and safety installations from the main hospital supplies.

Alarm system: fire, security and drug cupboard.

Clocks.

Staff/staff and patient/staff call system.

Telephone: conduits, cabling and outlets, but excluding instruments (handsets, payphones etc).

Data transmission: conduits and socket outlets only.

Television and background music: conduits to and outlets in main waiting and dialysis areas.

c. **Equipment (Group 1)**

X-ray viewers in consulting/examination room.

Controlled Drugs cupboard.

Dishwasher.

Water boiler.

Thermostatic mixing valves.

Bedpan disposal unit.

Operating light.

Washing machine.

Washer/disinfector.

Bedhead unit.

Schedules of Accommodation

6.31 The following schedules are based on the text in Chapters 2 and 3, and are illustrative of the acceptable accommodation for the functional units detailed.

HBN 21 – MATERNITY DEPARTMENT: ENTRANCE
Schedule of Accommodation

Para. No	Activity	SPACE AREA m²	1 Entrance Qty	TOTAL AREA m²
	MAIN ACTIVITY			
3.002	Draught Lobby	5.00	1	5.00
3.002	Foyer	7.00	1	7.00
3.002	WC – Type 2	2.50	2	5.00
	NET TOTAL			17.00
	Planning	5%		0.85
	Sub-Total			17.85
	Engineering zone	3%		0.54
	Circulation	22%		3.93
	GROSS TOTAL			22.31
	DEPARTMENTAL TOTAL			**20.00**

HBN 21 – MATERNITY DEPARTMENT: ENTRANCE

Para. No	Activity	Space Area m²	Planning m²	Sub-total m²	Engineering m²	Circulation m²	Total m²
	Optional Accommodation						
3.002	Pram Parking Area	2.00	0.10	2.10	0.06	0.46	2.50

HBN 21 - MATERNITY DEPARTMENT : MATERNITY ANTENATAL / POSTNATAL CLINIC FACILITIES
Schedule of Accommodation

Para. No	Activity	SPACE AREA m^2	8 C / E rooms Qty	TOTAL AREA m^2
	MAIN ACTIVITIES			
	Reception and Waiting			
	Reception Desk	20.00	1	20.00
	Waiting Area - 25 people	31.00	1	31.00
	Children's Play Area	13.00	1	13.00
	Nappy Change Room	4.00	1	4.00
	Infant Feeding Room	5.50	1	5.50
	WC's - Type 2	2.50	2	5.00
	Specimen WC - Type 4	4.50	2	9.00
	Consulting Examination and Treatment			
	Consulting / Examination Room	13.50	8	108.00
	Interview / Discussion Room	9.00	2	18.00
	Support Spaces			
	Clean Utility / Preparation Room	11.50	1	11.50
	Dirty Utility / Disposal Room	12.50	1	12.50
	Equipment Store	7.00	1	7.00
	Linen Store	3.50	1	3.50
	Domestic Services / Cleaners' Room	7.00	1	7.00
	Switchcupboard	2.00	1	2.00
	Office Accommodation			
	Medical Staff Office - 2 person	11.00	1	11.00
	Midwife-in-Charge Office - 1 person	9.00	1	9.00
	Multi-purpose Office - 1 person	9.00	1	9.00
	General Office - 3 person	15.00	1	15.00
	NET TOTAL			301.00
	Planning	5%		15.05
	Sub - Total			316.05
	Engineering zone	3%		9.48
	Circulation	27%		85.33
	GROSS TOTAL			410.87
	DEPARTMENTAL TOTAL			**410.00**

HBN 21 – MATERNITY DEPARTMENT : MATERNITY ANTENATAL/POSTNATAL CLINIC FACILITIES

Para. No	Activity	Space Area m^2	Planning m^2	Sub-total m^2	Engineering m^2	Circulation m^2	Total m^2
	Essential Complementary Accommodation						
3.027	Preparation for Parenthood Room	40.00	2.00	42.00	1.26	11.34	54.50
3.028	Preparation for Parenthood Store	15.00	0.75	15.75	0.47	4.25	20.50
3.032	Snack-bar and Store	13.00	0.65	13.65	0.41	3.69	17.50
3.029	Staff Rest Room / Beverage Bay	16.00	0.80	16.80	0.50	4.54	22.00
3.033	Male Staff Changing Room	9.00	0.45	9.45	0.28	2.55	12.50
3.033	Female Staff Changing Room	9.00	0.45	9.45	0.28	2.55	12.50
3.033	Staff WC – Type 2	2.50	0.13	2.63	0.08	0.71	3.50

HBN 21 – MATERNITY DEPARTMENT: MATERNITY ANTENATAL/POSTNATAL CLINIC FACILITIES

Para. No	Activity	Space Area m^2	Planning m^2	Sub-total m^2	Engineering m^2	Circulation m^2	Total m^2
	Optional Accommodation						
3.034	Treatment Room	16.50	0.83	17.33	0.52	4.68	22.50
3.035	Crèche Facilities	24.00	1.20	25.20	0.76	6.80	33.00
3.011	Consulting / Examination Room	13.50	0.68	14.18	0.43	3.83	18.50

HBN 21 – MATERNITY DEPARTMENT: ULTRASOUND SUITE
Schedule of Accommodation

Para. No	Activity	SPACE AREA m²	2 Scanning Rooms Qty	TOTAL AREA m²
	MAIN ACTIVITY			
	Reception and Waiting			
3.038	Waiting Area	5.00	1	5.00
3.045	WC – Type 2	2.50	2	5.00
3.045	WC – Type 4	4.50	1	4.50
	Consulting Examination and Treatment			
3.041	Scanning Room	16.50	2	33.00
3.040	Changing Cubicles	1.50	1	1.50
3.040	Changing Cubicles – disabled	3.50	1	3.50
	Support Spaces			
3.046	General Storage	6.00	1	6.00
3.046	Storage for Scans & X-rays	5.00	1	5.00
	Office Accommodation			
3.048	Radiographers' Office – 1 person	9.00	1	9.00
3.047	General Office	9.00	1	9.00
	NET TOTAL			81.50
	Planning	5%		4.08
	Sub-Total			85.58
	Engineering zone	3%		2.57
	Circulation	24%		20.54
	GROSS TOTAL			108.68
	DEPARTMENTAL TOTAL			**110.00**

HBN 21 – MATERNITY DEPARTMENT: ULTRASOUND SUITE

Para. No	Activity	Space Area m²	Planning m²	Sub-total m²	Engineering m²	Circulation m²	Total m²
	Essential Complementary Accommodation						
3.050	Staff Rest Room / Beverage Bay	10.00	0.50	10.50	0.32	2.52	13.50
3.049	Male Staff Changing Room	5.50	0.28	5.78	0.17	1.39	7.50
3.049	Female Staff Changing Room	5.50	0.28	5.78	0.17	1.39	7.50
3.049	Staff WC – Type 2	2.50	0.13	2.63	0.08	0.63	3.50

HBN 21 – MATERNITY DEPARTMENT: ULTRASOUND SUITE

Para. No	Activity	Space Area m²	Planning m²	Sub-total m²	Engineering m²	Circulation m²	Total m²
	Optional Accommodation						
3.041	Scanning Room	16.50	0.83	17.33	0.52	4.16	22.00

HBN 21 – MATERNITY DEPARTMENT: DAY ASSESSMENT UNIT
Schedule of Accommodation

Para. No	Activity	SPACE AREA m²	1 C / E room Qty	TOTAL AREA m²
	MAIN ACTIVITY			
	Reception and Waiting			
3.052	Waiting	7.00	1	7.00
3.052	WC – Type 2	2.50	2	5.00
3.052	WC – Type 4	4.50	1	4.50
	Consulting Examination and Treatment			
3.055	Consulting / Examination Room	13.50	1	13.50
3.053	Monitoring and Sitting Area – 4 beds	68.00	1	68.00
3.054	Beverage Bay	6.00	1	6.00
3.056	Staff Base	3.00	1	3.00
	Support Spaces			
3.057	Switch cupboard	2.00	1	2.00
	NET TOTAL			109.00
	Planning	5%		5.45
	Sub-Total			114.45
	Engineering zone	3%		3.43
	Circulation	23%		26.32
	GROSS TOTAL			144.21
	DEPARTMENTAL TOTAL			**145.00**

HBN 21 – MATERNITY DEPARTMENT: DAY ASSESSMENT UNIT

Para. No	Activity	Space Area m²	Planning m²	Sub-total m²	Engineering m²	Circulation m²	Total m²
	Essential Complementary Accommodation						
3.061	Staff Rest Room / Beverage Bay	10.00	0.50	10.50	0.32	2.42	13.00
3.059	Clean Utility / Preparation Room	11.50	0.58	12.08	0.36	2.78	15.00
3.060	Dirty Utility / Test Room / Disposal Room	6.50	0.33	6.83	0.20	1.57	8.50
3.063	General Office – 1 person	9.00	0.45	9.45	0.28	2.17	12.00
3.065	Linen Store	3.50	0.18	3.68	0.11	0.85	4.50
3.062	Cleaners Room	7.00	0.35	7.35	0.22	1.69	9.50
3.064	Equipment Store	12.00	0.60	12.60	0.38	2.90	16.00

HBN 21 – MATERNITY DEPARTMENT: DAY ASSESSMENT UNIT

Para. No	Activity	Space Area m^2	Planning m^2	Sub-total m^2	Engineering m^2	Circulation m^2	Total m^2
	Optional Accommodation						
3.053	Monitoring and Sitting Area – 4 beds	68.00	3.40	71.40	2.14	16.42	90.00
3.054	Beverage Bay	6.00	0.30	6.30	0.19	1.45	8.00
3.066	Creche Facilities	24.00	1.20	25.20	0.76	5.80	32.00

HBN 21 – MATERNITY DEPARTMENT: EARLY PREGNANCY UNIT
Schedule of Accommodation

Para. No	Activity	SPACE AREA m^2	1 Day Unit Qty	TOTAL AREA m^2
	MAIN ACTIVITY			
	Reception and Waiting			
3.067	Waiting	7.00	1	7.00
3.067	WC – Type 2	2.50	1	2.50
3.067	WC – Type 4	4.50	1	4.50
	Consulting Examination and Treatment			
3.068	Staff Base	6.00	1	6.00
3.071	Multi-Bed Room – 4 Beds	40.00	1	40.00
3.073	Beverage Bay	6.00	1	6.00
3.072	Bath / WC / Bidet	9.50	1	9.50
3.070	Day Room – up to 6 people	12.00	1	12.00
3.069	Assessment Room – 1 person	8.00	1	8.00
3.074	Interview / Discussion Room – 2 person	9.00	1	9.00
3.075	WC – Type 2	2.50	2	5.00
3.076	Assisted Shower / WC – Type 2	7.00	1	7.00
	NET TOTAL			116.50
	Planning	5%		5.83
	Sub-Total			122.33
	Engineering zone	3%		3.67
	Circulation	27%		33.03
	GROSS TOTAL			159.02
	DEPARTMENTAL TOTAL			**160.00**

HBN 21 – MATERNITY DEPARTMENT: EARLY PREGNANCY UNIT

Para. No	Activity	Space Area m^2	Planning m^2	Sub-total m^2	Engineering m^2	Circulation m^2	Total m^2
	Essential Complementary Accommodation						
3.077	Clean Utility / Preparation Room	7.00	0.35	7.35	0.22	1.98	9.50
3.078	Dirty Utility / Disposal Room	12.50	0.63	13.13	0.39	3.54	17.00
3.080	Staff Changing	5.50	0.28	5.78	0.17	1.56	7.50
3.081	Staff Rest Room / Beverage Bay	10.00	0.50	10.50	0.32	2.84	13.50
3.079	Cleaners Room	7.00	0.35	7.35	0.22	1.98	9.50

HBN 21 – MATERNITY DEPARTMENT: EARLY PREGNANCY UNIT

Para. No	Activity	Space Area m^2	Planning m^2	Sub-total m^2	Engineering m^2	Circulation m^2	Total m^2
	Optional Accommodation						
3.071	Multi-Bed Room- 4 Beds	40.00	2.00	42.00	1.26	11.34	54.50
3.073	Beverage Bay	6.00	0.30	6.30	0.19	1.70	8.00
3.072	Bath / WC / Bidet	9.50	0.48	9.98	0.30	2.69	13.00
3.082	Creche Facilities	24.00	1.20	25.20	0.76	6.80	33.00

HBN 21 – MATERNITY DEPARTMENT: IN-PATIENT ACCOMMODATION INCLUDING BIRTHING FACILITIES AND OPERATING THEATRE & HIGH DEPENDENCY CARE

Schedule of Accommodation

Para. No	Activity	SPACE AREA m²	2,500 births per annum OPTION 1* Qty	TOTAL AREA m²	OPTION 2* Qty	TOTAL AREA m²
	MAIN ACTIVITY					
	Reception and Waiting					
3.084	Reception desk	10.00	1	10.00	1	10.00
3.086	Waiting Area	11.00	1	11.00	1	11.00
3.086	WC – Type 2	2.50	1	2.50	1	2.50
3.086	WC – Type 4	4.50	1	4.50	1	4.50
	Consulting Examination and Treatment					
3.088	Standard LDRP Room	28.50	18	513.00	18	513.00
3.095	En-suite Facilities	5.00	18	90.00	18	90.00
3.096	(Shared) Medical Equipment Store	9.00	9	81.00	9	81.00
3.088	Standard LDRP Room for Disabled	32.50	1	32.50	1	32.50
3.095	En-suite Facilities	7.50	1	7.50	1	7.50
3.096	Medical Equipment Store	5.00	1	5.00	1	5.00
3.104	Single Bed Rooms	11.50	11	126.50	15	172.50
3.105	En-suite Facilities	6.50	11	71.50	15	97.50
3.106	4-Bed Multi-Bed Rooms	40.00	2	80.00	1	40.00
3.108	En-suite Facilities	7.00	2	14.00	1	7.00
3.109	Assisted Bathroom – Type 2	16.00	1	16.00	1	16.00
3.112	Neo-natal Resuscitation Room	18.00	1	18.00	1	18.00
3.113	Blood Bank / Blood Gas Analysis	6.00	1	6.00	1	6.00
3.110	Staff Base	6.00	3	18.00	3	18.00
3.114	Sitting Room	18.00	2	36.00	2	36.00
3.115	Beverage Bay	6.00	2	12.00	2	12.00
3.116	Treatment Room	16.50	1	16.50	1	16.50
3.087	Consulting / Examination Rooms	16.50	1	16.50	1	16.50
3.120	Interview / Discussion Room – 2 person	9.00	1	9.00	1	9.00
	Facilities for Staff					
3.133	Staff Rest Room	16.00	1	16.00	1	16.00
3.134	Pantry	8.50	1	8.50	1	8.50
	Support Spaces					
3.122	Clean Utility / Preparation Room	10.00	3	30.00	3	30.00
3.124	Dirty Utility	9.00	3	27.00	3	27.00
3.125	Disposal Room	3.00	3	9.00	3	9.00
3.127	Pantry / Cook-chill Trolley room	12.00	1	12.00	1	12.00
3.131	Trolley / Wheelchair Parking	6.00	1	6.00	1	6.00
3.131	Flying Squad Equipment Store	3.00	1	3.00	1	3.00
3.131	Equipment Store	12.00	1	12.00	1	12.00
3.131	Linen Store	2.00	3	6.00	3	6.00
3.126	Domestic Services / Cleaners Room	7.00	3	21.00	3	21.00
3.132	Switch cupboard	2.00	1	2.00	1	2.00
	Office Accommodation					
3.135	Medical Staff Office – 2 person	11.00	2	22.00	2	22.00
3.136	Senior Midwives Office – 1 person	9.00	1	9.00	1	9.00
3.137	Midwives Office	11.00	1	11.00	1	11.00
3.139	Seminar Room	25.00	1	25.00	1	25.00
3.138	General Office – 3 person	15.00	1	15.00	1	15.00
	Operating Theatre Suite					
3.140	Reception Lobby	19.00	1	19.00	1	19.00
3.141	Anaesthetic Room	15.00	2	30.00	2	30.00
3.147	Operating Theatre	40.00	2	80.00	2	80.00
3.153	Scrub-up and Gowning Room	10.00	2	20.00	2	20.00
3.156	Recovery Room (1 room-4 beds)	36.00	1	36.00	1	36.00
3.161	Dirty Utility / Disposal Room	11.00	1	11.00	1	11.00
3.164	Clean Utility / Preparation Room	7.00	2	14.00	2	14.00
3.165	Male Staff Changing	7.00	1	7.00	1	7.00
3.165	Female Staff Changing	7.00	1	7.00	1	7.00
3.167	Separate WC/Shower and Lobby	6.50	2	13.00	2	13.00
3.168	Beverage Bay	4.00	1	4.00	1	4.00
3.169	General Office	13.50	1	13.50	1	13.50
3.170	Switchcupboard	2.00	1	2.00	1	2.00
	NET TOTAL			1,688.00		1,713.00
	Planning	5%		84.40		85.65
	Sub-Total			1,772.40		1,798.65
	Engineering zone	3%		53.17		53.96
	Circulation	28%		496.27		503.62
	GROSS TOTAL			2,321.84		2,356.23
	DEPARTMENTAL TOTALS			**2,320.00**		**2,355.00**

*** (Options 1 & 2 relate to the different combinations of single to multi-bed rooms)**

HBN 21 – MATERNITY DEPARTMENT: IN-PATIENT ACCOMMODATION INCLUDING BIRTHING FACILITIES AND OPERATING THEATRE & HIGH DEPENDENCY CARE

Schedule of Accommodation

Para. No	Activity	Space Area m^2	Planning m^2	Sub-total m^2	Engineering m^2	Circulation m^2	Total m^2
	Essential Complementary Accommodation						
3.171	Staff Overnight Stay	13.00	0.65	13.65	0.41	3.82	18.00
3.171	En-suite Facilities	6.50	0.33	6.83	0.20	1.91	9.00
3.174	Milk Kitchen Store	4.00	0.20	4.20	0.13	1.18	5.50
3.173	Male Staff Changing Room	15.00	0.75	15.75	0.47	4.41	20.50
3.173	Female Staff Changing Room	18.00	0.90	18.90	0.57	5.29	25.00
3.173	Shower – Type 3	6.50	0.33	6.83	0.20	1.91	9.00
3.175	Consultants Office	11.00	0.55	11.55	0.35	3.23	15.00
3.176	Medical Staff In-Training Office	11.00	0.55	11.55	0.35	3.23	15.00
3.177	Secretarial Office	13.50	0.68	14.18	0.43	3.97	18.50
3.178	Midwife Educationalists Office	9.00	0.45	9.45	0.28	2.65	12.50
3.179	Business Managers Office	11.00	0.55	11.55	0.35	3.23	15.00

HBN 21 – MATERNITY DEPARTMENT: IN-PATIENT ACCOMMODATION INCLUDING BIRTHING FACILITIES AND OPERATING THEATRE & HIGH DEPENDENCY CARE

Schedule of Accommodation

Para. No	Activity	Space Area m^2	Planning m^2	Sub-total m^2	Engineering m^2	Circulation m^2	Total m^2
	Optional Accommodation						
3.180	Relatives / Escorts Overnight Room	13.00	0.65	13.65	0.41	3.82	18.00
3.180	En-suite Facilities	6.50	0.33	6.83	0.20	1.91	9.00
3.088	Standard LDRP Room	28.50	1.43	29.93	0.90	8.38	39.00
3.095	En-suite Facilities	5.00	0.25	5.25	0.16	1.47	7.00
3.096	(Shared) Medical Equipment Store	9.00	0.45	9.45	0.28	2.65	12.50
3.088	Standard LDRP Room for Disabled	32.50	1.63	34.13	1.02	9.56	44.50
3.095	En-suite Facilities	7.50	0.38	7.88	0.24	2.21	10.50
3.096	Medical Equipment Store	5.00	0.25	5.25	0.16	1.47	7.00
3.104	Single Bed Rooms	11.50	0.58	12.08	0.36	3.38	16.00
3.105	En-suite Facilities	6.50	0.33	6.83	0.20	1.91	9.00
3.106	4-Bed Multi Bed Room	40.00	2.00	42.00	1.26	11.76	55.00
3.108	En-suite Facilities	7.00	0.35	7.35	0.22	2.06	9.50
3.181	LDRP Room with Birthing Pool (inc en-suite and store)	45.00	2.25	47.25	1.42	13.23	62.00

HBN 21 - MATERNITY DEPARTMENT : NEO-NATAL UNIT
Schedule of Accommodation

Para. No	Activity	SPACE AREA m²	6 Cots Qty	6 Cots TOTAL AREA m²	8 Cots Qty	8 Cots TOTAL AREA m²	10 Cots Qty	10 Cots TOTAL AREA m²	12 Cots Qty	12 Cots TOTAL AREA m²	20 Cots Qty	20 Cots TOTAL AREA m²
	MAIN ACTIVITIES											
	Reception and Waiting											
	Entrance Lobby	3.0	1	3.00	1	3.00	1	3.00	1	3.00	1	3.00
	Parents' Quiet Room	-	1	12.00	1	12.00	1	12.00	1	15.00	1	15.00
	Visitors' Room with Play Area	12.0	1	12.00	1	12.00	1	12.00	1	12.00	1	12.00
	Discussion / Interview Room	9.0	1	9.00	1	9.00	1	9.00	1	9.00	1	9.00
	Cloakroom	2.0	1	2.00	1	2.00	1	2.00	1	2.00	1	2.00
	WC - Type 2	2.5	2	5.00	2	5.00	2	5.00	2	5.00	2	5.00
	WC - Type 4	4.5	1	4.50	1	4.50	1	4.50	1	4.50	1	4.50
	Consulting Examination and Treatment											
	Single Cot Nursery	12.0	2	24.00	2	24.00	2	24.00	4	48.00	4	48.00
	Multi-Cot Nursery	-	1	18.50	1	24.00	2	37.00	2	37.00	4	74.00
	Treatment Room	16.5	1	16.50	1	16.50	1	16.50	1	16.50	1	16.50
	Hearing Assessment & Vision Testing	12.0	1	12.00	1	12.00	1	12.00	1	12.00	1	12.00
	Staff Base	6.0	1	6.00	1	6.00	1	6.00	1	6.00	1	6.00
	Support Spaces											
	Beverage Bay	6.0	1	6.00	1	6.00	1	6.00	1	6.00	1	6.00
	Laboratory	4.0	1	4.00	1	4.00	1	4.00	1	4.00	1	4.00
	Clean Utility / Preparation Room	11.5	1	11.50	1	11.50	1	11.50	1	11.50	1	11.50
	Dirty Utility / Disposal Room	8.5	1	8.50	1	8.50	1	8.50	1	8.50	1	8.50
	Laundry Room	10.0	1	10.00	1	10.00	1	10.00	1	10.00	1	10.00
	Milk Kitchen / Store	9.5	1	9.50	1	9.50	1	9.50	1	9.50	1	9.50
	Equipment / Maintenance Room / Store	12.0	1	12.00	1	12.00	1	12.00	1	12.00	1	12.00
	Linen Store	2.0	1	2.00	1	2.00	1	2.00	1	2.00	1	2.00
	Domestic Service / Cleaners' Room	7.0	1	7.00	1	7.00	1	7.00	1	7.00	1	7.00
	Switchcupboard	-	1	1.00	1	1.00	1	1.50	1	1.50	1	2.00
	Facilities for Staff											
	Male Staff Changing	-	1	12.00	1	12.00	1	12.00	1	12.00	1	15.00
	Female Staff Changing	-	1	12.00	1	12.00	1	12.00	1	12.00	1	15.00
	Shower - Type 3	6.5	2	13.00	2	13.00	2	13.00	2	13.00	2	13.00
	Office Accommodation											
	General Office	13.5	1	13.50	1	13.50	1	13.50	1	13.50	1	13.50
	Sisters' Offices	9.0	1	9.00	1	9.00	1	9.00	1	9.00	1	9.00
	Medical Staff Office	13.5	1	13.50	1	13.50	1	13.50	1	13.50	1	13.50
	NET TOTAL			269.00		274.50		288.00		315.00		358.50
	Planning	5%		13.45		13.73		14.40		15.75		17.93
	Sub - Total			282.45		288.23		302.40		330.75		376.43
	Engineering zone	3%		8.47		8.65		9.07		9.92		11.29
	Circulation	26%		73.44		74.94		78.62		86.00		97.87
	GROSS TOTAL			364.36		371.81		390.10		426.67		485.59
	DEPARTMENTAL TOTAL			**365.00**		**370.00**		**390.00**		**425.00**		**485.00**

HBN 21 – MATERNITY DEPARTMENT: NEO-NATAL UNIT

Para. No	Activity	Space Area m²	Planning m²	Sub-total m²	Engineering m²	Circulation m²	Total m²
	Essential Complementary Accommodation						
3.216	Staff Rest Room	16.00	0.80	16.80	0.50	4.37	21.50
3.219	Staff Overnight Room	13.00	0.65	13.65	0.41	3.55	17.50
3.218	Parents' Overnight Room	11.50	0.58	12.08	0.36	3.14	15.50
3.218	En-suite Facilities	6.50	0.33	6.83	0.20	1.77	9.00
3.220	Transporter Incubator Bay	4.00	0.20	4.20	0.13	1.09	5.50
3.217	Seminar Room – 10 people	20.00	1.00	21.00	0.63	5.46	27.00
3.221	Consultants Office – 1 person	11.00	0.55	11.55	0.35	3.00	15.00
3.222	Medical Staff-In-Training Office – 2 people	11.00	0.55	11.55	0.35	3.00	15.00
3.223	Secretarial Office – 1 person	7.00	0.35	7.35	0.22	1.91	9.50

HBN 21 – MATERNITY DEPARTMENT: NEO-NATAL UNIT

Para. No	Activity	Space Area m²	Planning m²	Sub-total m²	Engineering m²	Circulation m²	Total m²
	Optional Accommodation						
3.193	Single Cot Nursery	12.00	0.60	12.60	0.38	3.28	16.50
3.193	Multi-Cot Nursery – 4 cots	18.50	0.93	19.43	0.58	5.05	25.00
3.224	Milk Bank	4.00	0.20	4.20	0.13	1.09	5.50
3.225	Breast Pump Room	5.50	0.28	5.78	0.17	1.50	7.50

KEY TO WC, SHOWER & BATHROOM TYPES :

WCS TYPE 2 –	Ambulant, semi & assisted ambulant WC with rinse basin
WCS TYPE 4 –	Independent wheelchair user WC with rinse basin
SHOWER TYPE 2 –	Partially capable user (wheelchair) with assistance shower with WC and wash basin
SHOWER TYPE 3 –	Shower with WC and bidet
BATHROOM TYPE 2 –	Assisted patients bath to accommodate use of hoist if necessary with WC and wash basin

7.0 Activity Data

Introduction

7.1 Activity DataBase is an information system developed to help project and design teams by defining the users' needs more precisely. This information constitutes the computerised Activity DataBase for Windows, updated twice yearly.

7.2 Room Data Sheets record in more detail than is described in this Note each task or activity that is performed in a particular activity space, together with environmental conditions and the technical data necessary to enable the activities to be performed. Each Room Data Sheet also contains a list of relevant assembly and component codes and descriptions. Room area information is provided in conjunction with a room graphic.

7.3 Assembly Data Sheets provide narrative text and ergonomically arranged graphics to scale relating to one activity. They show equipment fitted or supplied as part of the building, and the necessary engineering terminals.

7.4 Component schedules provide information about the total quantities of group 1, 2 and 3 components for single data sheets or for all data sheets for a department. Group 4 components are not included in the schedule – see paragraph 1.12.

7.5 Activity data is only available in the form of magnetic media, but users may generate paper copies where required.

7.6 Further information about the use and preparation of activity data can be obtained from NHS Estates, Department of Health, 1 Trevelyan Square, Boar Lane, Leeds LS1 6AE.

Activity data applicable to this Note

7.7 The Room Data Sheets recommended for the activity spaces described in this Note are either new sheets, amended ones or ones selected from existing sheets. A list of Room Data Sheet code numbers and titles is given at the end of this chapter.

7.8 Further Room Data Sheets may be selected, or drawn up by project teams to their own requirements, for any services not described in the Note or included in the list.

7.9 In order to ensure consistent and economic provision, variations from the Room Data Sheets recommended for the spaces covered in this Note should be considered only where it has been decided that the function of a space will differ substantially from that described.

Lists of Room Data Sheets

7.10 The Room Data Sheets listed below may not carry a title identical to the activity spaces detailed in this Note. Use of the appropriate code number will, however, result in the correct activity space being accessed.

7.11 The Room Data Sheets are listed below in the same order as the spaces to which they relate are listed in the Schedule of Accommodation (Chapter 6).

7.12 Some of the Room Data Sheets listed below relate specifically to a department of a certain size. For smaller or larger sizes of department the Room Data Sheets will need to be amended as appropriate.

List of ADB codes

Entrance

Para. No.	Activity space	Code
3.2	Draught lobby	J0103
3.2	Foyer	J0133
3.2	WC (type 1)	V1101
	Optional Accommodation and Services	
3.2	Pram park	G0131

Antenatal and post-natal clinic facilities

Para. No.	Activity space	Code
	Reception and waiting	
3.4	Reception desk	J0419
3.5	Waiting area, 25 places	J1116
3.6	Children's play area, 6 children	J1403
3.9	Nappy change room	V1113
3.10	Infant feeding room	J0705
3.7	WC (type 2)	V1101
3.8	WC, specimen, wheelchair (type 4)	V1406
	Consulting, examination and treatment	
3.11	Consulting/examination	C0215
3.14	Interview/discussion room	D1702
	Support spaces	
3.15	Clean utility/preparation room	T0505
3.16	Dirty utility/disposal room	Y0412
3.18	Equipment store	W1605
3.19	Linen store	W1602
3.17	Domestic services/cleaners room	Y1201
3.20	Switchcupboard	K0101A
	Office accommodation	
3.22	Office, medical staff, 2 persons	M0319
3.23	Office, midwife's, 1 person	M0202
3.24	Office, multi-purpose, 1 person	M0219A
3.25	Office general, 3 persons	M1012
	Essential Complementary Accommodation	
3.27	Preparation for parenthood room	H0901
3.28	Store: preparation for parenthood	W1606
3.32	Snackbar with store	F0305
3.29	Staff rest room/beverage bay, 10 person	D0201
3.33	Staff changing, male, 14 person	V0518
3.33	WC/wash (type 2)	V1005
3.33	Staff changing, female, 14 person	V0518
3.33	WC/wash (type 2)	V1101
	Optional Accommodation	
3.11	Consulting/examination	C0215
3.34	Treatment room	X0107
3.35	Crèche facilities	J1415
3.35	WC/wash for children	V1105

Ultrasound department

Para. No.	Activity space	Code
	Reception and waiting	
3.38	Waiting area, 2 persons	J1213
3.45	WC/wash (type 2)	V1101
3.45	WC/wash (type 4)	V0904
	Consulting, examination and treatment	
3.41	Scanning room	E0112
3.40	Changing cubicle, ambulant	J1222
3.40	Changing cubicle, disabled	J1223
	Support spaces	
3.46	Store and sundries	W1531
3.46	Store for scans and X-rays	W0302
	Office accommodation	
3.48	Radiographer's office, 1 person	M0414
3.47	Office, general, 1 person	M0220A
	Essential Complementary Accommodation	
3.50	Staff rest room/beverage bay, 5 person	D0205
3.49	Staff changing (male or female)/ cloakroom	V2204
3.49	WC/wash (type 2)	V1005
	Optional Accommodation	
3.41	Scanning room	E0112

Day assessment unit

Para. No.	Activity space	Code
	Reception and waiting	
3.52	Waiting, 5 persons	J1204
3.52	WC/wash (type 2)	V1101
3.52	WC/wash, wheelchair, (type 4)	V0904
	Consulting, examination and treatment	
3.55	Consulting/examination room	C0213
3.53	Monitoring and sitting area (4 beds)	B0815

Para. No.	Activity space	Code
3.54	Beverage bay	P0703
3.56	Staff base, 1 staff	T0123
	Support spaces	
3.57	Switchcupboard	K0101A
	Essential Complementary Accommodation	
3.61	Staff rest room/with beverage bay	D0205
3.59	Clean utility/preparation room	T0505
3.60	Dirty utility/test room/disposal room	Y0409
3.63	Office: general, 1 staff	M0219A
3.65	Store: linen	W1602
3.62	Domestic services/cleaners room	Y1201
3.64	Store: equipment	W1424
	Optional Accommodation	
3.53	Monitoring and sitting area (4 beds)	B0815
3.54	Beverage bay	P0703
3.66	Crèche facilities	J1415
3.66	WC/wash for children	V1105

Early pregnancy unit

	Reception and waiting	
3.67	Waiting, 5-6 places	J1204
3.67	WC (type 2)	V1101
3.67	WC (type 4)	V0904
	Consulting, examination and treatment	
3.68	Staff base, 1 staff	T0110
3.71	Multi-bed room, 4 beds	B0804
3.73	Beverage bay	P0703
3.72	Bath/WC/ bidet (type 3)	V1702
3.70	Day room, 6 persons	D1201
3.69	Assessment room	C0507
3.74	Interview/discussion room	D1702
3.75	WC (type 2)	V1101
3.76	Shower/WC, wheelchair (type 2)	V1612
	Essential Complementary Accommodation	
3.77	Clean utility/preparation	T0502
3.78	Dirty utility/disposal room	Y0412
3.80	Staff changing	V2204
3.80	WC/wash (type 2), semi-ambulant	V1101
3.81	Staff rest/with beverage bay, 5 person	D0205
3.79	Domestic services/cleaners room	Y1201
	Optional Accommodation	
3.71	Multi-bed room (4 beds)	B0804
3.73	Beverage bay	P0703
3.72	Bath/WC/Bidet	V1702
3.82	Crèche facilities	J1415
3.82	WC for children	V1105

Para. No.	Activity space	Code

In-patient accommodation including birthing facilities and operating theatre

	Reception and waiting	
3.84	Reception, 2 staff	J0206
3.86	Waiting, 6-8 places	J1202
3.86	WC/wash (type 2)	V1101
3.86	WC/wash (type 4)	V0904
	Consulting, examination and treatment	
3.88	LDRP – standard room	B1001
3.95	Shower/WC/bidet, ambulant	V1615
3.96	Store: medical equipment	W1609
3.88	LDRP – standard, disabled	B1003
3.95	Bath/WC/bidet, disabled	V1710
3.96	Store: medical equipment	W1604
3.104	Single bed room	B0807
3.105	Shower/WC/bidet (type 3)	V1615
3.106	Multi-bed room, 4 beds	B0806
3.108	Shower/WC/bidet, ambulant	V1304
3.109	Assisted bathroom (type 2)	V1714
3.112	Resuscitation room: neo-natal	B1410
3.113	Blood bank/blood gas analysis	L1303
3.110	Staff base, 1 staff	T0117
3.114	Day sitting room	D0807
3.115	Beverage bay	P0703
3.116	Treatment room	X0107
3.87	Consulting/examination	C0213
3.120	Interview/discussion room	D1702
	Facilities for staff	
3.133	Staff rest room, 10 places	D0510
3.134	Pantry	P0616
	Support spaces	
3.122	Clean utility/preparation room	T0601
3.124	Dirty utility with bedpan disposal unit	Y0304
3.125	Disposal room	Y0605
3.127	Pantry with cook-chill trolley (24 trays)	P0606
3.131	Trolley/wheelchair bay	G0111
3.131	Store: flying squad equipment	W1603
3.131	Store: equipment	W1424
3.131	Store: linen	W1422
3.126	Domestic services/cleaners room	Y1201
3.132	Switchcupboard	K0101A
	Office Accommodation	
3.135	Office, medical staff, 2 staff	M0319
3.136	Office, senior midwife's, 1 staff	M0202
3.137	Office, midwives', 2 staff	M0319

Para. No.	Activity space	Code
3.139	Seminar room, 15 persons	H0520
3.138	Office, general, 3 staff	M1012
	Operating theatre suite	
3.140	Reception lobby	J0113
3.141	Anaesthetic room	N0302
3.147	Operating theatre	N0105
3.153	Scrub-up and gowning room, 2 places	N0201
3.156	Recovery room, 4 beds	B2409
3.161	Dirty utility/disposal	Y0410
3.164	Clean utility/preparation room	T0501
3.165	Staff changing (male and female)	V0516
3.168	Beverage bay	P0703
3.167	Shower/WC and lobby	V1302
3.169	Office, general, 2 staff	M1304
3.170	Switchcupboard	K0101A
	Essential Complementary Accommodation	
3.171	On-call room	M0903
3.171	Shower/WC ensuite	V1301
3.174	Milk kitchen/store	P1008
3.173	Staff change, 14 persons	V0518
3.173	Staff change, 20 persons	V0512
3.173	Shower/WC/wash/lobby	V1302
3.175	Consultants office	M0304
3.176	Office: medical staff in-training	M0320
3.177	Office: secretarial, 2 staff	M1304
3.178	Office: midwife educationalist	M0206
3.179	Office: business manager	M0219A
	Optional Accommodation	
3.180	Relatives/escorts overnight stay	D1302
3.180	Shower/WC/wash	V1301
3.88	LDRP – standard room	B1001
3.95	Shower/WC/bidet, ambulant	V1615
3.96	Store: medical equipment	W1609
3.88	LDRP – disabled	B1003
3.95	Bath/WC/bidet	V1710
3.96	Store: medical equipment	W1604
3.104	Single-bed room	B0807
3.105	Shower/WC/bidet	V1620
3.106	Multi-bed room, 4 beds	B0806
3.108	Shower/WC/bidet	V1304
3.181	LDRP room with birthing pool	V1725
3.88	LDRP – high dependency	B1102

Neo-natal unit

Para. No.	Activity space	Code
	Reception and waiting	
3.188	Entrance lobby/reception	J0102
3.191	Parents' quiet room, small	D1403
3.191	Parents' quiet room, large	D1402
3.189	Visitors room/play area	D1401
3.192	Cloakroom	V2203
3.190	Interview/discussion	D1702
3.192	WC (type 2)	V1101
3.192	WC/wash, wheelchair (type 5)	V0904
	Consulting/examination and treatment	
3.193	Single cot nursery	B1401
3.193	Multi-cot nursery, 6 cots	B1403
3.193	Multi-cot nursery, 8 cots	B1404
3.198	Treatment room	X0107
3.200	Examination, assessment, hearing/visual	C0505
3.197	Staff base	T0116
	Support spaces	
3.202	Beverage bay	P0703
3.204	Laboratory	L1303
3.203	Clean utility/preparation room	T0514
3.205	Dirty utility/disposal	Y0417
3.208	Laundry room	Y0507
3.201	Milk kitchen/store	P1004
3.209	Maintenance equipment store	L1802
3.210	Store: linen	W1602
3.207	Domestic services/cleaners room	Y1201
3.211	switchcupboard	K0101A
	Facilities for staff	
3.212	Staff change, 10 person	V0516
3.212	Shower/WC/wash/lobby	V1302
	Office accommodation	
3.215	Office: general, 2 staff	M1304
3.213	Office: sister	M0206
3.214	Office: medical staff, 2 staff	M0319
	Essential Complementary Accommodation	
3.216	Staff rest room	D0510
3.219	Staff overnight room	M0903
3.219	Shower/WC/wash en-suite	V1301
3.218	Parent's suite, with 1 cot	D1502
3.218	Shower/WC/wash en-suite	V1301
3.220	Store: transporter incubator	W1610
3.217	Seminar room, 10 places	H0503
3.221	Office, consultant	M0304
3.222	Office: in-training staff, 2 staff	M0320
3.223	Office: secretarial, 1 staff	M0219A
	Optional Accommodation	
3.193	Single-cot, nursery	B1401
3.193	Multi-cot nursery (4 cots – intensive care)	B1407
3.224	Milk bank	P1005
3.225	Breast pump room	P1006

Appendix 1: Ergonomic diagrams

Activities

Facilities for multiple births and for a woman or partner who uses a wheelchair. Facilities for labour, assisting mother to give birth, infant care including resuscitation and recovery for the mother. Accessible bathroom for mother and partner. Sleeping facilities for partner. Facilities for using computer and for storing equipment.

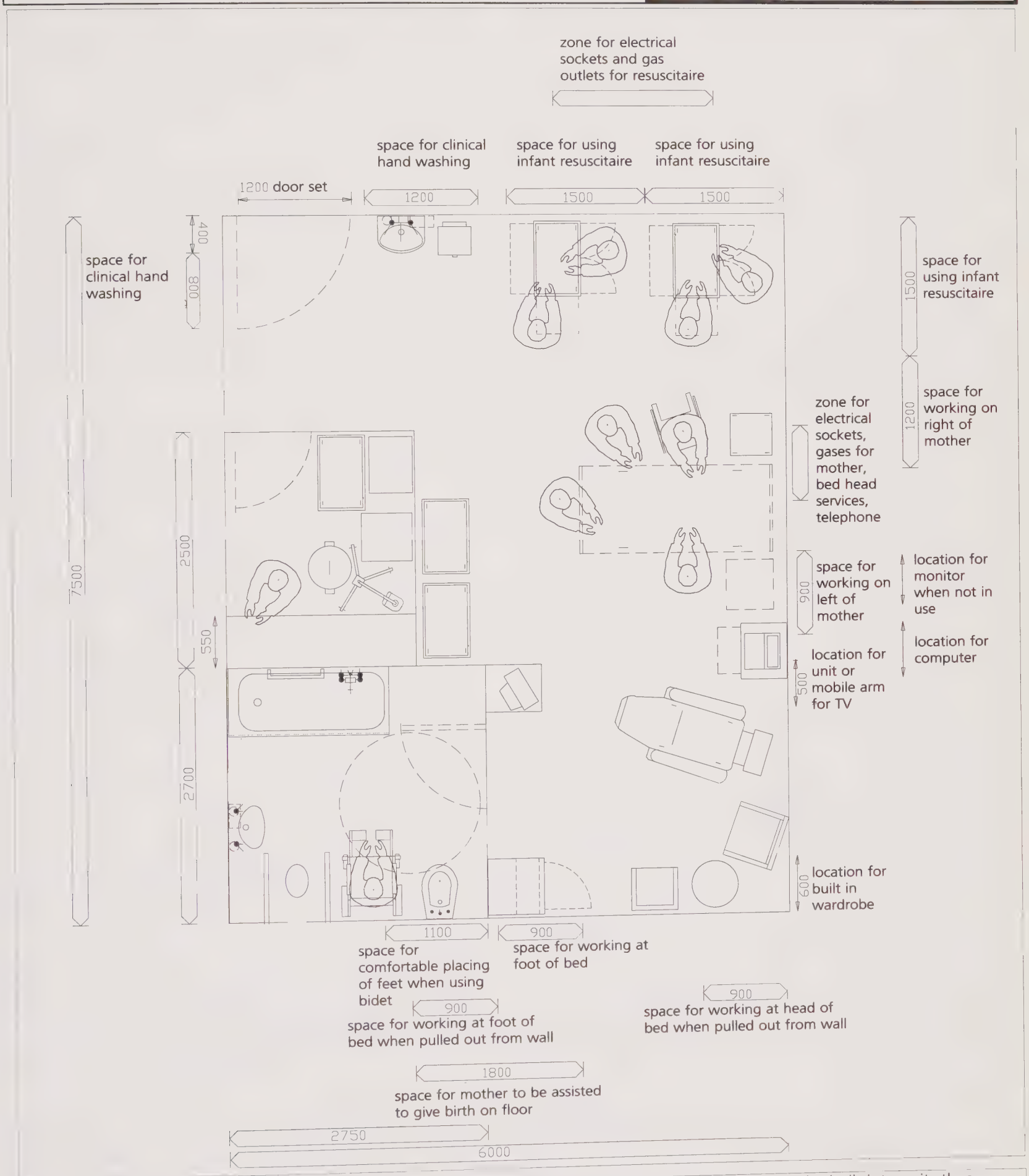
NHS Estates Ergonomic Data Bank Component user data sheet, not to scale

Large LDRP room

With en suite bathroom and equipment room

Users

Mother, partner, up to six assisting staff



1350(1300)

Preferred minimum (*Restricted minimum)* (not recommended for general use, see explanatory notes)

Notes

1. Electrical and gas sockets to be concealed from view until required.
2. The computer, for writing patients' notes, is shown in a unit with a pull out shelf for the keyboard either at 900 for standing use or 700 for seated use. Care must be taken with lighting for the computer so that the screen can be read easily.
3. A table of 700 high may be more comfortable for sitting at for meals than a coffee table. A round table is safer when children may be present.
4. It may be possible for the monitor and resuscitaire to be built into units thus screening them from view until required. The equipment room, with worksurface and storage, could then be correspondingly smaller.
5. The TV can either be mounted on a mobile arm or sited on a unit at 900 high to allow it to be watched from the bed and the lounge area. A unit could provide storage facilities.

Activities

Facilities for labour, assisting mother to give birth, infant care including resuscitation and recovery for the mother. Bathroom facilities for mother and partner. Sleeping facilities for partner. Facilities for using computer and for storing equipment.

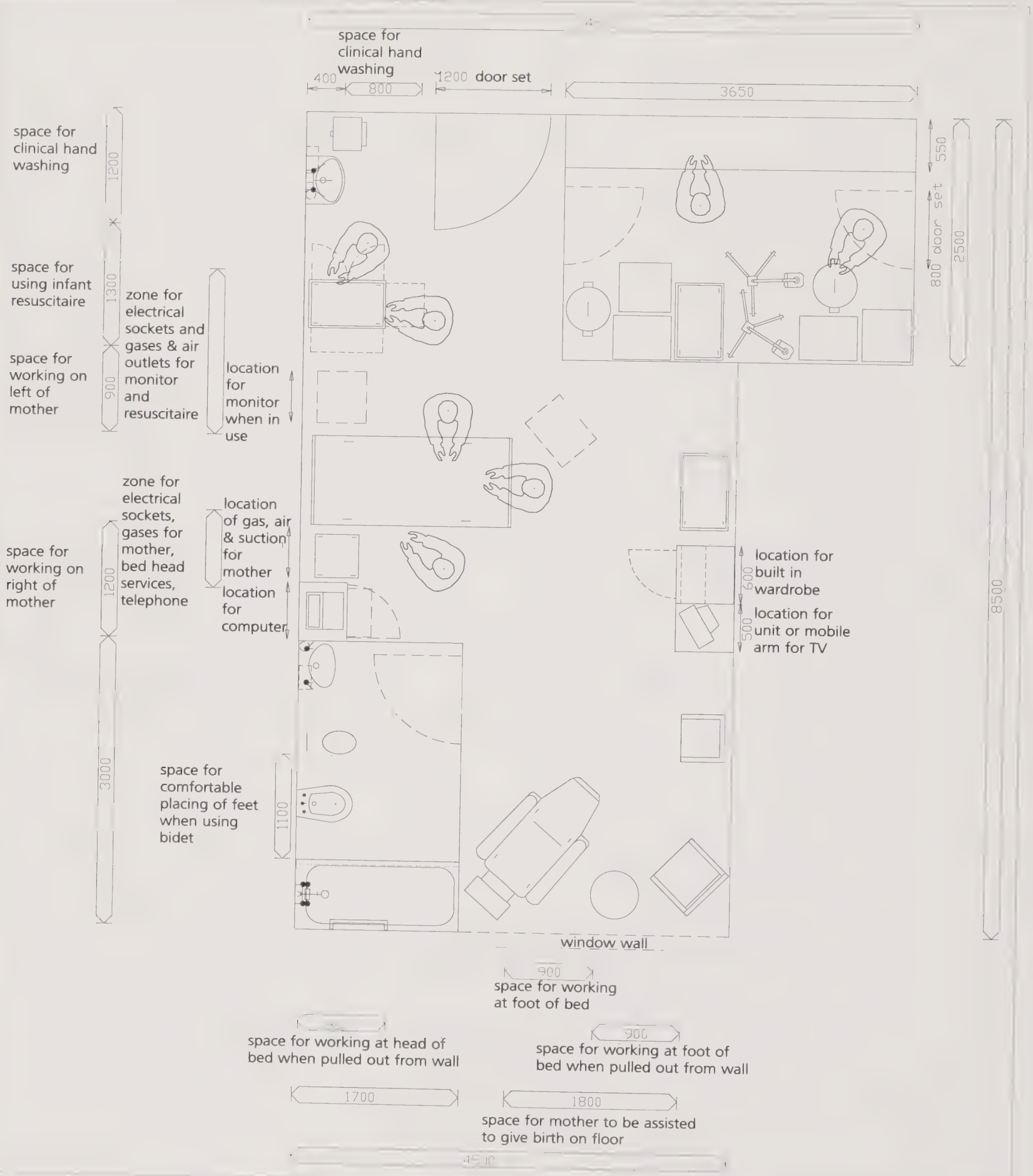
NHS Estates Ergonomic Data Bank
Component user data sheet, not to scale

Standard LDRP room

With en suite bathroom and equipment room

Users

Mother, partner, up to six assisting staff



1300

Preferred minimum (*Restricted minimum*) (not recommended for general use, see explanatory notes)

Notes

1. Electrical and gas sockets to be concealed from view until required.
2. The computer, for writing patients' notes, is shown in a unit with a pull out shelf for the keyboard either at 900 for standing use or 700 for seated use. Care must be taken with lighting for the computer so that the screen can be read easily.
3. A table of 700 high may be more comfortable for sitting at for meals than a coffee table. A round table is safer when children may be present.
4. It may be possible for the monitor and resuscitaire to be built into units thus screening them from view until required. The equipment room, with worksurface and storage, could then be correspondingly smaller.
5. The TV can either be mounted on a mobile arm or sited on a unit at 900 high to allow it to be watched from the bed and the lounge area. A unit could provide storage facilities.

Appendix 2 – Glossary

Accessible care:
Care which women are able to reach and to receive.

Amniocentesis:
The removal of fluid surrounding the foetus under ultrasound guidance for analysis, for example in prenatal diagnosis.

Antenatal care:
Care of women during pregnancy by doctors and midwives in order to predict and detect problems with the mother or the unborn child. Advice is also offered on other matters relevant to pregnancy and health.

Bag and mask resuscitation:
Manual revival using an air-refillable bag and close fitting face mask to push air into the lungs.

Caesarean section:
An operation by which the baby is delivered through an incision in the abdominal wall and uterus.

Cardiotocography:
The pictorial display of foetal heart rate patterns used to assess foetal well-being in pregnancy and labour.

Complicated pregnancy:
A pregnancy in which a risk of complication is evident or in which a complication occurs.

Consumer:
A user of the maternity services; the pregnant woman.

Diathermy:
The passage of an electric current to affect the coagulation or cutting of tissue.

Domino:
Abbreviation of "domiciliary in/out". This is a model of maternity care in which women are taken into hospital in labour by their own midwife who delivers them and then transfers them home shortly after birth.

Eclampsia:
A grand mal fit: the result of uncontrolled pre-eclampsia.

Ectopic pregnancy:
A pregnancy situated outside the uterus, commonly in the fallopian tube.

Epidural anaesthesia:
A local anaesthetic injected around the spinal sac causing complete loss of sensation in the lower part of the body, to a level which allows a surgical procedure to be undertaken in that area without pain.

Epidural analgesia:
A local anaesthetic injected around the spinal sac causing some numbness in the lower part of the body. It relieves labour pains effectively.

Foetal:
Of foetus.

Intervention:
Clinical procedure in pregnancy or labour, for example, inducation of labour or delivery of a baby with the aid of instruments, or by caesarean section.

Intrapartum:
During labour.

Intubation:
The passing of a tube into the trachea to establish an unobstructed airway.

Lithotomy:
A recumbent position adopted to enable visualisation of the vagina and birth canal in order to facilitate, for example, a forceps delivery.

Midwife/GP unit:
A maternity unit in which midwives and/or general practitioners are the professionals leading the maternity care.

Neonatal:
The first four weeks of life in a baby.

Obstetric flying squad:
A specialist team providing an emergency obstetric service outside hospital.

Perinatal:
The time of birth and the first week of life.

Phototherapy:
The use of ultra-violet light to treat babies with jaundice.

Postnatal:
Pertaining to six-week period following birth.

Post Partum:
Following birth.

Pre-eclampsia:
A maternal condition characterised by high blood pressure, protein in the urine and generalised oedema (swelling).

Prenatal:
During pregnancy; antenatal.

Tertiary referral centre:
A teaching hospital providing specialist neonatal care.

Appendix 3 – Local Area Network (LAN) diagram

Glossary

Introduction

1. This glossary explains the meaning of those terms used in connection with "Station functions" on Figure 3 (see paragraph 4.11) that are not self-explanatory.

Orders

2. Electronicaily placing orders for tests, for example, blood tests and X-rays and clinical services, for example, physiotherapy and audiology.

3. This function may also include the ability to enquire on the status of orders placed previously, for example, received, being processed and completed.

Results

4. Electronically receiving results of orders (paragraph 2), for example, results of blood tests and X-rays, direct from clinical service departments.

5. This function may also include the ability:

- for urgent results to be "automatically" referred for the attention of the responsible clinician;
- to enquire on a series of results relating to a single patient.

Order communications system

6. The "Orders" and "Results" functions are usually combined in an order communications system.

Clinical coding

7. The process by which clinical information, for example, diagnoses, symptoms and treatment, is entered into a computer in a coded form.

8. It is noted that one element of the NHS Information Management and Technology (IM&T) Strategy is the development of a thesaurus of coded clinical terms and groupings.

GP contact

9. A facility to exchange patient information with general practitioners, either by electronic mail or directly by means of a computerised communications network.

10. This facility is also a feature of the NHS IM&T Strategy.

Waiting lists

11. Access to a clinician's waiting list management system.

Appointments

12. Maintaining, or making enquiries of, the appointments systems.

Health records

13. Access to health records held electronically as text, coded data or digitised images, for example, X-rays.

Patient assessment

14. Access to a system which supports the structured assessment of a patient's requirement for clinical care and the systematic collection of data associated with the assessment.

Care planning

15. Access to a system which supports the:

- systematic planning of care, appropriate to a patient's assessed needs;
- calculation of the amount of nursing resource and the correct skill mix, necessary to deliver the planned care.

Staff rosters

16. Maintenance of rosters for staff. Computer systems can assist nurse managers in the preparation of rosters.

Nursing management system

17. The "Patient assessment", "Care planning" and "Staff rosters" functions are usually combined in a single nursing management system.

Community contact

18. A facility to exchange patient information with community, primary care and/or other sectors or agencies, for example, social services department, either by electronic mail or directly by means of a computerised communications network.

Decision support

19. Access to a system which can present either clinical or management information in a way that assists the process of decision-making or planning. Systems typically make strong use of graphical displays and allow a level of statistical analysis or "what if" modelling.

Contracting

20. A facility which enables the activities of a radiology department to be monitored against its contracts and assists with the management of extra-contractual referrals

Non-clinical orders

21. Electronically placing orders for non-clinical services, for example, for repairs and for supplies.

22. This function may also include the ability to enquire on the status of orders placed previously, for example, received, being processed and completed.

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Safe disposal of clinical waste. Health Service Advisory Committee, Health and Safety Commission, 1992.

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